

ADVANCED MANAGEMENT

Quarterly Journal

*The Society for the
Advancement of Management*

America Must Go to Work
Keyman-Supervisory Incentives
Labor's Responsibility for Full Productivity
Direct and Indirect Incentives
Cost Reduction through Better Utilization of
Tools and Equipment
The Role of Labor in Modern Industrial Society
Time Out for Briefing

March, 1947

Vol. XII, No. 1

ADVANCED MANAGEMENT

Quarterly Journal

Published by THE SOCIETY FOR THE ADVANCEMENT OF MANAGEMENT, INC.

84 William Street, New York 7, N. Y.

VOLUME XII

March



1947

NUMBER 1

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Re-entered as second-class matter, December 13, 1939 at the Post Office at New York, N. Y., and on June 17, 1943, at York, Pa., under the Act of March 3, 1879.

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Comment

IT was a wise philosopher who said, "He who has the power thinks he can command the end, yet he cannot endure the means." The temptation upon those in command is always to assume the issuance of an order carries with it assurance that the order will be carried out. This assumption tends to be beguiling in proportion to the amount of power the individual possesses. In fact, this is one of the familiar corrupting influences of personal power when it is exercised without the check of shared deliberation and joint conference.

Another more recent slogan carries with it an emphasis which is more in line with the current dynamic and more accurate view of human nature, now gaining wider acknowledgement . . . namely, let good instruction take the place of order-giving. Wise as this is, and as influential as it has become in centering executive attention on the value of training programs for every level of workers, and the value of dealing with executive associates with an educational approach, it still does not take full account of the subtlety of the human nature being dealt with.

Modern grasp of the nature of the thought process and of the occasions by which reasoning, judging, and choosing are best advanced, makes it clear that thinking, planning and contriving solutions are basically social processes. Of course each individual carries on his reflections within his own mind and with ideas he has come by. But the deeper and the practical questions are: how did he come by his ideas; how does he use them; are they adequate data to aid in the reaching of valid conclusions; are his preconceptions and prejudices such as to handicap his examination of evidence and force his reasoning effort to foregone conclusions?

The answers to all such questions have a social bearing, a social origin, and social consequences. We do not and we cannot think unto ourselves alone. We deceive ourselves when we assume that "I have thought this through and I intend that my decision shall stand." Executive positions in the large affairs of our day tend by force of circumstance and the nature of executive problems to become more and more *group* decisions, which is wise.

But in the area of human relations and especially in coming to grips with the effort to implicate the good will and the zeal of foreman and workers, we surely are moving more slowly than we should into a recog-

nition that *group decisions require involving in the thought process representatives of the groups affected by the decisions*. Shared thinking is a commonplace of technical research and of board of directors' meetings, to cite two familiar instances. But the same logic and the same creative possibilities remain to be realized in the executive handling of relations with rank and file problems of all kinds.

The fact is that recent study of the dynamics of productive group action has thrown a flood of light upon the dynamics of productive thinking and of a developing sense of group responsibility.

Testimony from the wisely led and sincerely and honestly conducted labor-management production committees before, during, and after the war is conclusive that shared deliberation is a vital key to productivity and to morale. So, too, is the testimony from the "multiple management" experiments.

We have the job of applying in group relations and in the relations of group to group within organizations, the total set of conditions which invite responsible reasoning and practical, workable, and appealing decisions, judgments, and choices.

These conditions have to do with such matters as the following: the correct statement of the problem being attacked; an adequate analysis of its component parts in their relative importance; a comprehensive assembly of factual material relevant to a solution; a persistent effort to see new relations in the facts which suggest a tentative answer, solution or hypothesis; the securing of agreement upon what looks to all like a workable solution; and a trial of that solution to establish its validity.

This succession of steps can and does take place in individual minds. But the process of reasoning thus suggested, when it has to do with issues affecting human relations, profits immeasurably by being a shared process of joint give and take, a common effort of the minds of those men whose stake in the outcome is reasonably direct.

The meeting of minds, the giving effect to effective communication, the creation of attitudes which are cooperative and not resistant, resentful, and hostile . . . all this necessary condition of that good collaboration essential to industrial and shop harmony, depends in the last analysis upon making provision that the social nature of reasoning be recognized, be organized, and be utilized for creative ends.

ORDWAY TEAD

America Must Go to Work Higher Productivity Is Our Need

By ELDRIDGE HAYNES

Publisher, Modern Industry

(Mr. Haynes Article Was First Presented as an Address at the S.A.M. Conference, Hotel New Yorker, December 6th, 1946)

IT would be difficult indeed to find an intelligent person who would challenge the admonition "America must go to work." Businessmen want materials; housewives want new refrigerators, washing machines, radios; married veterans want homes; millions want a new car. People the world over want American machinery and supplies. There is so much work to be done that it will take us *years* to catch up.

For example, if we produce 5 million cars annually, it will take us 9 years to duplicate the per capita ownership of automobiles of the same average age which we had before the war. If we build a million homes per year for 20 years we shall fail to duplicate the per capita ownership of houses of the same average age we had before the war.

British industrialists and officials in the British Labour Government are praying that America will go to work for *political* reasons. As the last bastion of capitalism in the world, we are making a sorry spectacle before the uncertain and confused people of Europe and Asia. The Communists in Britain, in France, and elsewhere are enjoying and exploiting the frequent breakdowns of our free enterprise economy—the discontent of American consumers, the difficulties our government encounters in coping with powerful trade unions, and the wail of employers in this land of so-called opportunity.

If within the next few years we are to achieve a standard of living higher than prewar, and thereby prove to the doubting peoples of other lands *by example* that the American way is the best way—yes, we will have to go to work and work harder and produce more than we ever have before in peacetime, and keep it up for several years.

So—the real question is not *whether* we should go to work—but *how*. How are we going to restrain miners or the workers of any other key industry from ever again strangling the economic body of America? How are we going to replace among workers the desire to coerce with the desire to cooperate? How are we going to get the prices of our products down instead

of up—down so that they are within the economic reach of millions of Americans and others? These are the real questions and until we answer them we shall be frustrated in trying to answer the big question—how can America go to work. And the important fact is—these are *management* questions. Unless management finds the answers to these practical "how" questions, America may muff the ball in its hour of greatest opportunity. The first challenge then, is for *management to go to work*.

Industrial Management Due for Tremendous Responsibilities

Until November 5th last, it was customary for some to say that little could be done until the New Deal was removed from Washington. Well, for all practical purposes, the New Deal is gone—and we can be sure that the net effect of the new legislation will be to remove government from many areas of business management—to restrain labor unions from the acquisition or use of monopoly power—and *to put upon industrial management more responsibility than it has had for fourteen years*.

While some will acclaim this change with happy enthusiasm, it is even more important for all of us to reflect very soberly upon the full significance of the new opportunities and new problems which will be ours.

If the American people and their newly elected representatives needed any proof that the Wagner Act should be modified, that *unions* as well as corporations *must* be held responsible for the faithful adherence to a contract, and that an industry-wide union is a monopoly to be feared fully as much as an industry-wide corporation, Mr. John L. Lewis has supplied the needed proof.

But no law, in a constitutional democracy can force men to work against their will; no law can build friendships between employers and employees; no law can speed production; no law can eliminate waste; no law can sell goods; and, except by reducing taxes, no law can cut costs. Yet these are the impera-

tive requirements for America's going to work. The most that we have a right to expect from the government is a green light. *We* must supply the initiative and the drive to move ahead. The challenge to prove the merit of free enterprise is now squarely ours.

Free Enterprise Rests on Three Legged Stool

It is important then for management to be united in its concept of free enterprise. I was educated to believe that a free, capitalistic economy meant the conduct of business for the profit of the stockholders. Profits, I was taught, were at once the measure and the purpose of business.

I believe that the overwhelming majority of management men *today* will agree that a corporation has equal responsibilities to *three* groups of people of whom stockholders are only one. Or, to state it more graphically, free enterprise rests on a three-legged stool. Certainly each of the three legs are equally important. Certainly, if one leg fails, the stool will collapse. And so it is with free enterprise. Every corporation rests on the support of three groups of people. Without the support of any one of the three any corporation will collapse.

The first of these three groups (but not necessarily the most important—any more than any one leg of our three-legged stool could be called the most important leg) is the consumer.

At the entrance to the great Bata shoe works in Czechoslovakia before the war was a huge sign which greeted the workers on every shift, and all visitors to the plant. Translated into English, this sign said: "Remember, the consumer pays our wages." I wonder if the coal miners are beginning to understand that the American consumer is the fellow who pays their wages? I wonder whether the workers in *your* plant fully realize that it is your *customers* who pay their wages.

But even management has all too often forgotten this simple truth in recent years when hardly a company worried about orders. For six years the customer has suffered—suffered shortages, maddening delays, exasperatingly rotten service, and humiliating indignities at the hands of green and untrained and uncaring sales people. But worst of all, the consumer has been forced to pay high prices.

Drastic Changes Just Ahead

Now this picture is going to change,—drastically and in 1947. Consumer resistance to higher prices—the desire for consumer durable goods when they

are available, plus increasing competition, is going to bring the prices of soft goods—processed foods and textiles—*down*. That's all to the good. All prices *must* come down. For the crux of the question whether America actually will go to work, hinges on prices. We cannot produce except what consumers will buy. They will buy more if prices are lower. Therefore the only way we can produce more—the *only way America can really go to work—is to get prices down*. That, I submit, is the Number One management problem. That obviously will require greater efficiency in both manufacturing and selling.

And selling really begins in the plant. In the design of the product and the materials and craftsmanship that are put into it—in the costs and therefore the price of the product. The first, fundamental step in selling is to be taken in the plant itself.

It is high time that all of us thought a great deal more about the consumer. When he makes up his mind about voting for or against some law which touches the vital interest of free enterprise, he is not concerned about business profits. If, in 1947, business doubles its profits, the consumer will not be impressed. *Consumers will judge free enterprise by the job business does for consumers*. The surest way to endear free enterprise to the hearts of the people the world over is to produce more goods and better goods, at lower prices.

When the scholars of the future write the history of our times, I am sure that they will say that this was the age in which America emerged from its shell and took an active leading role in world affairs, not only on a political and military level, but also on an industrial, commercial, and cultural level. I mention this because I believe we must broaden our definition of consumers. All of us here have been accustomed to think of consumers as that group of people who live between San Francisco and New York. But right now—before our very eyes—and in this city—a new concept of civilized life is being created. I predict that we here will live to see the day when we shall think of London and Paris as we think now about Chicago and Detroit—not only as markets, but also as sources of material, equipment, and labor.

The automobile industry already has this point of view. Few people realize not only that American automobiles are sold around the world, but also that an American car has in it more than 300 products from 56 countries.

The natural forces of industry are international, and, if allowed freedom as we know it in this country,

can contribute enormously to removing the economic causes of war. Industry reaches anywhere in the world for materials, labor, technical skill, administrative ability. By nature, industry reaches all over the world for its market—seeks ever-widening opportunities to serve. By nature, industry recognizes no political boundaries, no racial, religious, or language differences among men. An automobile is made to serve all man—black, white, or yellow regardless of religion, language, or politics. The maker of the automobile seeks the best materials he can find anywhere on the face of the earth or in the sea—he seeks the best talent he can find regardless of where the man was born, his creed, or his politics.

Consider the Employee

The second leg of our three-legged stool—the second group on which every business depends for efficient operation is—the *employee*. The vast majority of management men today recognize that industry must not only render a service to consumers, but must also provide a good living and good working conditions for employees. We shall seriously misinterpret the times if we conclude that the elections, the temper of the people, and the coming legislation will set aside our labor problems for some time. And the worst that could happen, in my view, is for the pendulum to swing too far to the right.

Let us remember the British general strike in 1926—and the anti-labor legislation which was passed by the Conservative Party then in power—and the final results. While it is true, the labor unrest was reduced, the movement was also given a cause which eventually won it public support and more power than ever before.

In our minds we must make a sharp distinction between the economic gains of labor over the past years in wages, hours, social security, and working conditions, on the one hand, and the great and monopolistic power which unions have won, on the other. Obviously, the monopolistic power must be restrained; and unions must be held equally responsible with management for the sanctity of contracts. But far-sighted management has no desire to subtract from the economic welfare of workers. On the contrary management has a great responsibility, in my view, to prove to the doubting peoples of the world all over again that working people in America receive higher real wages, greater real security, better working conditions, as well as greater opportunities than do the working people of totalitarian states. And that

in America—we haven't stopped raising the living standards of the working people—but that their lot is constantly improving.

Twenty-three years ago I was on a freighter and was required to work twelve hours a day seven days a week for \$40 per month. If anyone has that in mind when he says America must go to work, I for one disagree.

A wise man said to me one time—management's job is constantly to reduce the amount of human sacrifice necessary to satisfy constantly expanding human wants. With that I agree.

Management is becoming increasingly aware that good pay *alone* does not guarantee happy relationships with workers. That most scientifically developed incentive systems based upon time and motion study—plus group life insurance, plus paid vacations, plus pensions, plus safe, healthful working conditions—all of these cannot guarantee happy relationships. For there remains a deep emotional urge in the heart of almost every working man for self-expression and for participation in the affairs which shape his work and his future.

The driving force behind the union movement has not been solely the desire for economic betterment. The desire for participation and self-expression has found fulfillment in union halls.

Powers of Thinking Wasted

In our country every boy is taught to believe that his opinion counts. He is taught to think—to analyze problems—to find solutions. He is schooled in self-expression. He is taught to debate, to recite, to make speeches. And when he emerges from school and gets his first job what does he find? He is all too often given a number and made a sort of anonymous figure in a large crowd of workers—which in itself is a blow to his pride. He is put in an assembly line and told to tighten three bolts all day long in dreary, unchallenging monotony. No one asks his views. He is not invited to participate in anything except to tighten bolts. He isn't invited to make a speech. He isn't even invited to *think*.

And then a fellow-worker says, "Jimmy, come on down to the union hall tonight." And there—in the union hall, he finds people who are interested in him as a human being. He is invited to participate in the discussion. His mental processes are challenged. He is urged to express himself.

I am deliberately exaggerating the scene to make a vital point clear. And the point is that our scientific

methods fail to satisfy the hunger of the American worker for thinking—for active participation—and for self-expression. Indeed, more than one plant has found it profitable to give workers more operations to perform deliberately to challenge their mental processes. And we have barely started to learn how to share ideas and problems with workers—to invite their minds and their hearts to participate in the solution of our mutual problems—and to find outlets for self-expression which build a sense of partnership between employees and management.

Here's another scene which is all too typical. A union leader calls on the employer to demand higher pay. The employer says, "Mr. Jones, you look like a reasonable fellow. I want to lay all the cards on the table with you. Here is our financial situation. Look at our profit and loss statement and our balance sheet." On leaving the plant, the union leader says to an employee, "Tell the boys to come on down to the hall tonight. I've got some dope to give them." And so the boys go to the union hall and learn from a union official about the financial condition of the company they work for.

We cannot hope to make much headway in educating workers on the economic facts of life unless we open their minds and their hearts by our own actions. And there is a tremendous lot of education ahead of us. I asked the present British Minister of Labour, Mr. George Isaacs, whether the British labor unions and the Labour Party were trying to sell the worker on accepting labor-saving equipment. He replied, with vehemence, "For heaven's sake, don't call it labor-saving equipment. Call it labor-aiding equipment instead, because that is what it is. It helps the worker to produce more, and then to earn more; to work fewer hours, and be spared the physical burdens of back-breaking labor."

The great American talent for selling sorely needs to be directed to within the plant as well as without it. And among other things, we need to sell the truth that the aspirations of every worker can be fulfilled only when we produce more.

Role of the Stockholder

The third leg of our three-legged stool—the third group of people every business depends upon is the stockholder. Obviously, every business must make a profit or it collapses. But more than that, it must make enough profit to attract new capital—the new capital necessary for expansion and for modernization for efficient operation—the capital needed for the land

and buildings and tools we must have if we are to produce more. A good test of the job any business has done for its stockholders—is the response it gets when it appeals for more money for expansion.

There are some people who believe that big business is big enough and that the country will not be bettered by big business getting bigger. I for one don't share this view—but I do believe that if the day ever comes when it is too difficult to attract capital for new enterprise, America will have sold its birthright. When that day comes, then we can no longer say that America is the land of opportunity—the country where a man can go into business for himself. A hundred years ago, a man could start his own business with little or no capital, but not today.

Contrary to a popular conception, Wall Street is *not* the source of new enterprise capital in America. There are billions of dollars in Wall Street seeking investment in established corporations, but hardly a cent for new enterprise. The sober fact is that the men who have confidence in new enterprise in America—the men who are themselves enterprising—are not the financiers of Wall Street, but rather the industrialists and management men of industry—in Pittsburgh, in Cleveland, in Detroit, and Chicago and Cincinnati.

Now I do not mean to be overly critical of Wall Street, because these men are perhaps more keenly aware than any other group of the disturbing fact that profit margins of American Business have been going downhill. Profits per dollar of sales income—or profits per dollar of invested capital—have been sliding down hill for years and years. And if this trend continues where is free enterprise? Where is any money for new enterprise? Where is money for the expansion of existing enterprise?

Currently, profits are being caught in a great squeeze play between forces which are driving prices down—and other forces which are driving costs up. Our editors have just completed a survey of some 200 manufacturing companies, and only 13% expect costs to be lower in 1947 than they were in 1946. 16% expect costs to remain about the same, and 71% expect costs to go up!

Every one of these plants is struggling to offset these higher unit costs. And their managements are doing a great many things. Here are the first nine:

1. Install new production machinery and equipment.... 86%
2. Improve plant layout..... 78%
3. Add mechanized materials handling equipment..... 59%
4. Emphasize methods engineering & work simplifications 55%

5. Increase attention to training supervisors..... 44%
6. Increase attention to worker training..... 43%
7. Adopt new production controls..... 41%
8. Add incentive wages..... 41%
9. Redesign product(s) to cut materials, production costs 39%

It is significant that the first three methods industry plans to adopt—the most important measures industry will take to offset higher costs—*require capital*. Production machinery—improved plant layout—materials handling equipment—all require capital.

Summary

Now to summarize for a moment: Of course, America must go to work. We must to regain our prewar standard of living and to advance it further. We must to make our contribution to the reconstruction of a war-torn world. We must to prove by example that the American way is best.

Now if we are to go to work within the framework of free enterprise, we must base our plans on the fact that every corporation depends upon three groups of people—consumers, employees, and stockholders.

I submit that there is only *one* way in which American industry can satisfy all three—only one way that we can meet the demands of consumers, the aspirations of employees, and the hopes of stockholders. And that one way is GREATER PRODUCTIVITY per man, or per woman, per hour.

Only greater productivity will make possible the production of more goods at lower prices for con-

sumers. Only greater productivity can raise the *real* wages of labor. And only greater productivity can increase profits for stockholders and at the same time deliver greater value to the consumer and better living to the worker.

And that is why your program committee so wisely chose productivity as the theme for this conference. And in the papers which follow this one you will be given hundreds of practical ideas and experiences on the know-how for greater productivity.

In the last analysis, greater productivity is the over-riding challenge to management. To each of us in a very personal sense, it defines our job ahead. It applies with equal force to every management function. No business can have a department for greater productivity. It will be achieved only with every management man at every level playing his part—in engineering, in finance, in sales, in production, in purchasing, and in administration—playing his part in cooperation with *understanding workers*.

There are millions of people who haven't been educated to understand and accept this truth of productivity as the key need. Yet everyone in America must understand it if every consumer, every worker, and every stockholder is to have his desires fulfilled. And so, individually, we have an educational job to do. Perhaps it is an educational job which we can do collectively as well as individually. And if so, I know of no group of men in the world better fitted to undertake it than the members of the Society for the Advancement of Management.

Keyman—Supervisory Incentives

By J. A. LOWDEN

Director J. D. Woods & Gordon Limited

(Mr. Lowden's Article Was First Presented as an Address at the S.A.M. Conference, Hotel New Yorker, December 6th, 1946)

EARLY last summer I spent a day with a group of some 25 union stewards from assorted Canadian industries who were attending a union-sponsored course in Time Study and Wage Incentive. At lunch, their instructor, a member of the industrial engineering department of one of this country's large union organizations, said something like this to me—"Your time study methods seem to coincide pretty well with those that I have been recommending. Personally, I feel that a wage incentive plan based on the principles you advocate is acceptable and useful. What is your attitude toward foreman incentives? I have been telling these people that they should always oppose them in their plants. I hope that you agree with me on that subject."

I could not agree and I stated my conviction that a well-formulated, carefully administered incentive plan for supervisors could make an extremely valuable contribution to effective plant operation. However, at the same time I had to admit that the overall record of experience with supervisory incentive plans in industry fell far short of supplying a convincing endorsement of my belief.

Historically, the life span of most of the plans that have been established during the past twenty years has been short. Formal systems of incentive for supervisors have never been widely employed, even among plants that have made wide-scale use of wage incentives. At various times they have been the target of deserved attacks from one or other of all three of the parties most directly concerned—labour, management and the supervisors themselves. Nevertheless, despite this indifferent record, the concept of supervisory incentives refuses to be subdued. As rapidly as one plan has stumbled to a fatal end in one plant, a new one seems to have been born in another. The technical press has continued to report regularly on case histories in which important accomplishments are credited to these new plans.

Out of the maze of conflicting evidence that past performance makes available to us, two conclusions emerge:

1. Financial incentives for supervisors can be an extremely potent force in industry. They do get results.

2. Our efforts to harness that force, direct it along constructive lines and maintain it through changing industrial situations, have been notoriously unsuccessful. Few of our plans stand the test of time.

These conclusions are strikingly reminiscent of those that were being reached by observers in the field of wage incentives not many years ago. I am sure many of you will recall the high mortality rate that prevailed among wage incentive plans in former years. The cause was seldom failure of the incentive to get results. Most frequently it was a case of self-destruction brought on by the fact that results greatly exceeded those that had been anticipated.

To-day wage incentive plans are developing durability and their future usefulness appears to be assured. We have reached this position because we have begun to evolve a philosophy which recognizes the practical problems that are to be met and to develop a common set of principles and techniques through which we can deal effectively with these problems. In the field of supervisory incentives we have yet to reach that stage.

The similarity of the present position of supervisory incentives to the position of wage incentives in earlier days suggests itself immediately when we view the multiplicity of the types of supervisory plans that we have been attempting to use. The variety of schemes developed and of factors employed in them is almost endless. We find plans based on volume of production, total unit costs, unit labour cost, average earnings of production workers, realization of budgets, departmental efficiencies, plant-wide efficiencies, control of scrap, control of daywork time, control of attendance, etc. Some have been tied directly to a single factor of this description. Others have attempted to measure supervisory performance by incorporating many. But few indeed do we find that follow the same pattern.

Do you remember the multitude of wage incentive systems whose relative merits were once so strenuously debated? Piece Work, Differential Piece Work, the Gantt Task and Bonus Plan, the Emerson Plan, the Halsey 50-50, and Bedaure, will recall a few. Each one reflected a somewhat different concept of the characteristics that made for an effective wage incentive.

To-day most of that diversity of opinion has been eliminated. The majority of our plans share a common basic pattern which incorporates uniform principles. In the field of supervisory incentives we seem to be still unable to decide what road to pick. The lessons that we have learned from wage incentive experience should keep us off many of the back trails that we have been taking. I think two of them are particularly significant.

In the earlier days many managements rushed into a wage incentive installation, spurred only by the promise of large payroll savings to be quickly realized. This attitude made gain sharing plans seem particularly attractive. For every extra dollar paid the employees, another dollar was saved by the company. The same attitude has inspired numerous supervisory incentive schemes. We are expressing it when we say "We are delighted to pay our foremen and set-up men those bonuses. They've upped production 20% over last year. The cost of bonuses is negligible against our profit on the extra volume. We can afford to pay them."

That type of "We can afford to pay" principle has no place in any formalized incentive plan that is designed for long-term use. It breeds the same form of later trouble that we make for ourselves in wage incentive when we say "Let's give the men a good rate on that job—it's along profit line." The chances are excellent that the time will come when we can't "afford to pay." But we will continue to need the influence of incentive most urgently.

For that reason supervisory incentive plans founded on such factors as volume of production, total unit costs, or other elements that are frequently subject to influences outside the control of the production supervisors, seldom prove to be durable. They are admittedly attractive. The attraction is particularly strong when we feel the need to offer quickly our supervisors an incentive arrangement as a means of paying them more money. They will undoubtedly have a definite incentive value at the outset. Further, they do permit the supervisory staff to share in company prosperity. There we find the "rub." We will be wise to remember this fact when we consider them because, basically, they are a form of profit-sharing arrangement. They are not incentive plans within the specific meaning that we have developed for the term when we use it in reference to wage payment.

A form of piece work known as "straight piece work" used to be a very popular basis of wage incentive. Under "straight piece work" the rate was set on a basis which was presumed to cover all contingencies.

The employee received exactly the value of the work he produced, regardless of what happened in the shop. The responsibility for all the factors affecting his output was placed entirely on the shoulders of the operator. Straight piece work is now largely discredited as a wage incentive arrangement. Management recognizes the importance of accepting its share of responsibility for what happens at the work place. However, in some of our incentive plans for supervisors we seem to be anxious to perpetuate the old philosophy. You see signs of this in the "comprehensive" plans—the ones that incorporate a long list of the various factors mentioned previously and include measurement of such frequently uncontrollable items as absenteeism, cost of learners, percentage of daywork time, etc. A review of some of these plans would suggest that their designers were endeavouring to free upper management of all administrative responsibility.

Many more cross-references could be made to indicate that we are still employing practices in the supervisory incentive field that we now know must be avoided in the field of wage incentive. The two that have been mentioned suggest a variety of similar analogies that I am sure will come to your minds. I feel that they are sufficiently illustrative to prove my point. The philosophy on which we are attempting to construct many of our incentive plans for supervisors is still extremely muddled. Until we clarify our objectives, recognize which ones an incentive plan can help us to reach and understand the principles that must be followed in reaching them, our plans will continue to be disappointing.

Basic Objective

Progress toward stability in wage incentive installations was initiated when we began to understand that the one basic objective of these plans was to combat waste—waste of labour time. There were two types of waste with which we had to deal. The waste incurred when the productive worker uses something less than his full ability to produce and the waste occasioned when delays outside his control halt or retard the production process. We first recognized the fact that a wage payment technique that would encourage the worker to make full use of his productive ability must protect him against the effects of unavoidable delays. The reduction of this latter form of waste was recognized as a management problem.

Then we began to learn that to maintain worker co-operation his incentive opportunity must be

consistent—both chronologically and as between different work classifications. Thus we found it necessary to develop an objective technique for setting production standards on a basis that took full account of the range of worker capacity with which we had to be prepared to deal.

Finally we realized that wage incentive plans do not manage our plants and are not self-administering. We found that they themselves require continuous management in order that proper adjustments may be made to meet every change that occurs in operating conditions.

If we are to stabilize the productive force that supervisory incentive plans can make available to us, it seems logical that we must follow a similar pattern of approach to the problem. We must first select a single definite objective that can be constantly pursued, establish the principles that we must accept in attempting to reach that objective and design techniques that will measure performance on a uniform and consistent basis.

Let us explore the scope for using supervisory incentives effectively if we recognize the limitations imposed by that pattern of approach. To begin, can we establish a single purpose toward which to direct the power that is inherent in incentive? I think we can. I think it can well be the same purpose that we are now recognizing as the real objective of our wage plans—namely, to combat waste. The existence or the hazard of waste is associated with all production operations and all industrial plants. Waste in a variety of forms is a constant threat to productivity whether our plants are operating at 100% of capacity or 50% of capacity. It would seem to be an incentive objective that can be common to all plants. Further, it is one that can be steadily pursued through changing economic and industrial situations. It remains equally important through good times and bad.

Assuming that we are prepared to accept that objective as our single purpose, we must then recognize the principle that an incentive plan will have an enduring value only if its operations are confined to fields in which the actions and attitudes of the participants in the plan can exercise a definite and measurable influence. The task of combating waste of four major types provides a field of supervisory action in which we can meet that requirement. The first two of these types are the ones already defined as the objectives of our wage incentive plans—waste of labour time in the form of failure of workers to use their full ability to produce and waste of labour time

in the form of delays which halt production completely. The third is waste associated with the use of direct materials or with scrap. The fourth is waste incurred in the use of consumable supplies and services.

What is the scope for using a formal system of incentives to keymen and supervisors to encourage action to combat these types of waste? Can we measure performance at the task on a consistent and uniform basis? Answers to these questions require separate consideration of each of the four fields.

Through the medium of wage incentive, we are already making a direct approach to the problem of limiting waste in the form of unused worker capacity to produce. But any experienced time-study man knows that more than the mere establishment of a wage incentive opportunity is required to accomplish our purpose. He is intimately familiar with the fact that wage incentive alone will seldom bring the average level of operator performance in a department up to the level that his time-study analyses tell him can be reached. He knows that this level is not attained and not held unless foreman, sub-foreman, set-up man and similar supervisory staff are constantly supplying the personal instruction, encouragement and leadership that are also needed by many among the working force.

Far too often the full importance of this phase of a supervisor's responsibility and the size of the job that falls on his shoulders is not recognized—either by management or by the supervisory group itself. The fact is that it is a task which requires constant thought and attention.

Provided we have a well-formulated wage incentive plan, we are equipped to measure the extent to which responsibility for the task is being accepted. Associated with any wage incentive plan, whether calculations are based on time units or money rates, is a target level of performance that should be reached by the average operator when he makes full use of his capacity to produce. Until the average actual performance of all qualified operators in a department equals or exceeds that target level, we are wasting production capacity. In the relationship between average actual performance and the target level we have a direct measure of supervisory accomplishment in the control of this waste.

Essential Points

Here certainly are the essential ingredients of a sound supervisory incentive arrangement. The me-

chanics involved in establishing a system are simple. If the average performance of all qualified operators is brought to the target level, we know that supervision has done a thorough job. Hence an adequate bonus is deserved and the amount must be determined. Below the target level a minimum level that will be considered acceptable performance must then be established. Working from these two points a scale of bonuses can be computed to reward upward progress from the minimum level. For example, if our target level for average performance is 25% above our standard time requirements and a 5% bonus to keymen is considered warranted at this level, the scale might be built on the basis of a 1% bonus to supervisors for each 5% by which average performance exceeded standard performance.

But raw figures which merely reflect the relationship between gross earnings of the production employees and their wages at basic hourly rates cannot be used to measure performance for this purpose. That relationship will often be temporarily influenced by a number of factors that are largely outside the control of the supervisory staff. An influx of learners, product or process changes which introduce substantial amounts of daywork time, delay allowances from causes beyond the control of supervision, are some of the common ones. Unless the effect of such factors is eliminated in the calculation of the performance figure it may fluctuate erratically, fail entirely at a measure of supervisory effort and lose its significance.

Before we can arrive at a figure that will yield a true measure of supervisory effectiveness we must define procedures to be followed in dealing with each of these eventualities. The principle that must guide us in establishing them will be illustrated if we consider the factors influencing one of them—the handling of learners.

We will be tempted to try to make our incentive accelerate learner progress. If we do it will be a hazardous diversion from our main purpose. Admittedly, learner progress is in part an important responsibility of supervision but it is usually a variable that is extremely unpredictable. It is frequently influenced by many considerations other than the calibre of supervision—for example, the selection procedures in use, staff training facilities available, the number of learners in training, etc. Experience has indicated that it is advisable to exclude learner performance from the calculation of department performance

entirely for a period long enough to assure completely adequate training.

From this illustration it will be evident that production and payroll records will have to be designed to segregate definitely controllable time and controllable production from that which is all or largely outside the control of immediate supervision. The needed performance figure is one which shows the performance of qualified workers during only the period when they were able to use their capacity to produce.

The second form of waste—the labour time lost from delays that halt or retard production—offers a field for supervisory incentive that is obviously appropriate. Few production departments are ever entirely free from such delays. They come from a wide range of sources. Lack of balance in the flow of work, machine breakdowns, shortages of supplies and tools, defects in materials, etc. are some of the most frequent ones. In wage incentive we have learned to recognize their importance as a continuing threat to productivity. We have found it necessary to design specific features to deal with them as they are met. The great majority of them are clearly subject to control by the production supervisors of the department concerned. That control can be exercised in two ways. The frequency with which the delays occur will in many cases be determined by the care that the supervisory group gives to planning. The duration of almost all will depend upon the resourcefulness of supervision in overcoming trouble when it is encountered. The usefulness of an incentive arrangement which will encourage the supervisory group in any department to develop their talents in these directions is readily apparent.

It is also evident that a basis of incentive measurement can be formulated. In the ratio of the total of time wasted by delays to the net volume of work produced as measured by time standards we have an index that can be used to measure control of this waste in a consistent manner through periods of fluctuating output. But two requirements must be met before that index will meet our qualifications. We must set up provisions which will prevent it from being distorted by delays from causes that are distinctly beyond the influence of the participating supervisors and we must be able to establish standards of performance that assure uniform evaluation between different departments.

To avoid distortion, a basic distinction will have to be established between two classes of delays—those

subject to control by the immediate supervision of the department and those which will be considered non-controllable. Only time losses from causes within the controllable group can be included in calculating the index. Non-controllable delays will, of course, be those of the general type suggested by delays caused by a complete power shut-down, by the use of substitute materials, etc. In this connection it should be remembered that the distinction must be made on the basis of whether the delay is controllable or non-controllable—not avoidable or unavoidable. We are concerned not only with the occurrence but also with its duration. Hence, while delays from machine breakdowns are often unavoidable, the time lost as a result is controllable in extent.

Establishing Standard for Measuring Performance

Our second requirement is to establish a standard against which we can measure actual supervisory performance in limiting controllable delay losses. Here we must avoid the temptation to repeat the error that has caused us so much trouble in wage incentive. We cannot say, "Let's call last month's average figure standard, and pay them for improving that." We will never measure performance consistently if we work from such a base. The criterion must not be what has been done but what can be done. We must determine a goal which we know can be attained and devised a bonus scale within the limits that it prescribes. This demands a careful study of the actual and possible causes of lost time in each department. Seldom can they be entirely eliminated but usually the loss can be kept to small proportions. Experience has indicated that in most factory operations which are largely manually controlled the ratio of lost time to total net output can be kept slightly below 1% when the quality of supervision is high.

Wastes associated with the production of scrap and with the use of consumable supplies and services were indicated as third and fourth fields in which incentive arrangements could be developed on a sound foundation. These fields will not always be available because the expenditures involved will not be sufficient to warrant the costs of the analysis required in preparing the plan or the record keeping needed to maintain it. However, where the value of scrap is important or where the outlay in consumable supplies and services is large, we can use incentives to achieve results of major importance. Since the methods to be followed in dealing with both fields are the same they can be discussed together.

The influence which keymen and supervisors can exercise over the production of scrap or its counterpart the excessive use of raw materials, is universally recognized. It is unnecessary to restate the numerous types of action which they must take to keep scrap losses to a minimum. Few will dispute the claim that performance in scrap control directly reflects quality of supervision and that it can form a sound basis for supervisory incentive.

It is also generally recognized that good supervision leads to low cost of consumable supplies and services. However, the full extent to which supervisors can control these costs is frequently not appreciated. We will appreciate it more definitely if we look in detail at the various phases of the supervisor's work that are involved. A few illustrations will indicate what I have in mind. Consider some of the types of expenditures of this kind associated with a machine shop department. Costs of consumable tools will be determined by the attention which supervision gives to selection of the best tool for the work, instructing operators in tool care, use of proper grinding methods, adequate machine maintenance, etc. The costs of repairs to machines will be influenced by operator training, by regularity of machine inspection to anticipate trouble, by supervision of maintenance department or tool room procedures when the repair work is in progress. The costs of cutting oils and lubricants will be affected by housekeeping standards, salvage arrangements, etc. In many types of production department it will be found that a listing of all of the expense elements of this general nature reveals a very substantial total sum over which supervision can exercise a large measure of control.

To develop an incentive factor to be used in either of these fields, our starting point must, of course, be the establishment of a systematic basis for measuring performance. We must have an index of actual costs of scrap or costs of consumable supplies which will give a true reflection of the control being exercised from one operating period to another. Occasionally this requirement will present a serious problem but normally it can be solved. Both scrap and the use of supplies and services derive from production and commonly very directly with volume. Thus if we are dealing with a single product, department scrap can sometimes be measured on a percentage basis and consumable supplies expense on a basis of cost per finished product. However, in multi-product departments a common denominator other than product units is needed. Very often the proper denominator

proves to be the hours of measured work performed in the department. Where that is so the index can be cost of scrap or cost of consumable supplies per hour of work produced.

When the validity of that relationship is determined, we are in a position to develop an incentive arrangement. Again we must remember that incentive standards must be based on what can be done, not what has been done. This does not mean that the records of past performance will be ignored. In fact they will have to be used extensively. But the information they provide must be supplemented by careful analysis that will show us the scope for subsequent improvement. In line with the practices that we have learned to follow in searching for improvements in production operations we shall "break the job down into its elements" and establish a target level of attainable cost for each separate type of expense. Only when these are subsequently accumulated shall we be able to select a sound target index figure for our incentive arrangement.

This method of analysis will usually yield a target figure that is substantially lower than any level reached in past experience. We should not be disturbed by that relationship. Experience has indicated that even in departments where previous supervisory control of scrap and consumable supply costs was apparently good the introduction of an incentive measurement has commonly led to subsequent reductions in these costs of 25% or more. That experience also indicates where the standard index figure at which bonus payments start can best be established, namely a point that is about one-third higher than the computed target. The basis for calculating a scale of bonusing based on the relationship of actual costs to these two points does not require repetition. However, certain points in connection with the maintenance and operation of incentives in this field should be raised.

When we are dealing with money costs over any period of time an extraneous variable is likely to be introduced. That is the influence of changes in price of certain types of supplies, for example. We must recognize this as one factor calling for continuous management of the incentive arrangement. Changes must be made in the target index figure to reflect these price changes.

When attempting to establish a target level for costs of consumable supplies and services we may find that actual figures for individual accounting periods are subject to wide fluctuation because certain

substantial expenses are not incurred uniformly in all periods. Where this situation exists the use of a moving average basis for calculating the index will be advisable. A moving average taken over a three-month period is normally adequate.

Conclusion

From within these four fields of waste control it is evident that we can develop for any production department an integrated supervisory incentive plan which can live a long and useful life because it will conform to the principles we have learned to respect in using wage incentive. Some departments will provide the opportunity for incorporating all four fields in the plan. In others we shall be limited to the two concerned with the use of labour time. However, these differences in construction of the individual plan will not alter the basic uniformity of the approach nor the importance of the results that it is designed to achieve.

That these results are important is best indicated by the fact that in practical application it is unwise to introduce all four phases of a plan of this description concurrently. Original achievement of the objective in any one phase usually constitutes a formidable task for supervision and in practice all can seldom be reached unless the separate phases are tackled progressively. Certainly not more than the two relating to labour time should be used at the outset. Until operator performance has been brought to its goal and delay time has been minimized the target levels in the other fields will seldom be attainable. For that reason each phase of the plan should provide a positive incentive opportunity. Failure to meet the standard performance level in one field should not constitute the basis of a charge against bonus earnings in another.

Earlier in this paper I made the statement that our incentive plans for supervisors suffered because the philosophy on which they were built was ill-defined. No doubt the suggestions since made will lead many to feel that I oversimplify the problem and reduce the sphere of incentive influence to limits that are much too narrow. Before I conclude I would like to clarify my position in this respect. I fully realize that a plan of the type outlined by no means covers all aspects of a supervisor's responsibility or functions. But I think we must also realize that an incentive based on measurement of performance is not the only form of incentive that is at our disposal. We have a wide variety of intangible incentives upon which we can and

should be drawing. In many supervisory training programs we are seeing their importance demonstrated. We have incentive opportunities associated with suggestion plans. At one point I criticized the use of a profit-sharing feature in the basic supervisory incentive plan. I do not belittle profit-sharing as an

incentive form. My conviction is simply this. Where we can employ a specific incentive based on performance measurement, we can get results that will otherwise not be realized. If we confuse this form of incentive with another, we are unlikely to realize the full benefit of either.

Labor's Responsibility for Full Productivity

By MRS. ELINORE HERRICK

Director of Personnel New York Herald Tribune

(Mrs. Herrick's Article Was First Presented as an Address at the S.A.M. Conference, Hotel New Yorker, December 6th, 1946)

TO European nations which have come to regard America as the "arsenal of the world", the greatest producer in the world, a land of fabulous riches, and who marvel at our scientific achievements and our standard of living, our own pre-occupation with problems of productivity must seem strange. But we have a very real problem and we shall not be able to maintain or improve our standards of living unless we can overcome the obstacles to securing full productivity. But I do not believe we can find proper solutions to this problem if we assume that the responsibility for full productivity falls only on the shoulders of labor—management inevitably shares in this responsibility.

There seem to me to be three major deterrents:

1. Uneconomic practices of labor
2. Inefficiencies of management
3. Jurisdictional disputes and strikes which have tremendous effect upon a production system so closely mashed as ours.

I should like first to analyze these factors and then to consider with you how we can perhaps overcome these handicaps.

Twenty-five years ago I was filling flat metal boxes with hot liquid shoe polish which later would harden and become the flat cake of "2-in-1" with which we are all familiar. I was paid an hourly wage—28¢ an hour—and it looked like a lot of money to me then. I was new to industry. This was my first job. I had children to support and I wanted to make a good impression with my new boss. The rough edges of the tins cut my hands, the hot polish burned them, the smell was nauseating—but I worked as fast as I could and was proud of the progress I felt I was making. It was not long on that first day before the girl on the opposite side of the bench said to me in a harsh whisper—"Hey sister, what you trying to do? Kill the job?" I did not know what she meant but at lunch time I was enlightened by an angry group. This was an unorganized plant but there existed an esprit de corps which had resulted in an informal but nevertheless real limitation on production. If you worked "too fast" you showed up those who were unable to work as

rapidly yet their need for employment was often no less than your own. If you worked too fast the supply of hot polish diminished more rapidly and you might be sent home early—being docked for the hours not worked.

Ten years later when I was a student at Antioch College, but also teaching a freshman class in economics, the students told me of similar experiences identical with my own in the shoe polish factory. Yet these students were not union members and in the main worked in unorganized establishments. Deliberate restrictions upon output by labor—insistence of the unions upon any uneconomic device which hampers attainment of maximum productivity and lowered costs is a threat to our national economy and jeopardizes just as seriously labor's own legitimate desire to see our standard of living raised and full employment achieved and maintained.

Drags on Progress

"Featherbedding"—"gold bricking"—"fake-work"—whatever you may choose to call it is no novelty. But such practices prevent progress, keep prices unduly high and in some instances lowers employment and often prevents an individual from learning a trade. These practices fortunately are not found in every industry or establishment. They flourish most of all in those industries organized by the old-line, tightly knit AFL craft unions, the independent railroad brotherhoods, and in the CIO auto and rubber workers unions.

The AFL early developed the philosophy of a "fair day's work for a fair day's wage." The unexpressed corollary to this is that where organized labor felt the wage was not "fair" output was withheld deliberately. With the growth of the unions and their better discipline over their members, formalized limitations upon production became relatively common.

When the bricklayers union many years ago decreed for its members how many bricks might be laid in a normal work day it was only another short step to the excesses of a Petrillo. Union insistence upon unnecessary workers has become an increasingly costly burden to Society. The producer of the play which has only

one stage setting must nevertheless employ a full crew of scene shifters precisely as though the stage set was to be changed three times each show. The newspaper which under union rules must carry a fixed crew of men on the presses although in another area on the identical machine a smaller crew is allowed is undeniably handicapped with respect to its cost of production and the productivity of the worker is lowered.

What can we say of "full production" when the Railroad Brotherhoods still hold to 100 miles a day as the stint for freight trainman and 150 miles for passenger trainman? Improved engines mean that this is two to three hours work only. It might have been all right 50 years ago but today it means that hundreds of workmen are employed unnecessarily. In turn this means that not only are railroads put at a competitive disadvantage with the air and bus lines but that the prices of consumer goods and materials of all kinds carried by the railroads are increased unnecessarily.

During the war I had experience on the East and West coasts with gangs of riveters. To do an identical operation the AFL on the West Coast required us to carry two more men in each gang than was the practice in various eastern shipyards.

During this period, too, I waged a guerilla warfare with the painters both AFL and CIO. The use of sprayers and big brushes, the pre-painting in the shops of items to be installed on ships was resisted at every point. In Washington, I am told, the painters refused to work on certain government buildings because they were asked to apply a special paint requiring only two coats instead of the usual four.

Petrillo, of course, is an example par excellence. His union held up for more than a year the musical-record business which gave employment to many ultimately. Now he is hindering the new static-less frequency modulation broadcast. He has even interfered in the training and development of new musicians, not permitting music students to play for the public.

Such practices have a lot to do with the hard-sledging that pre-fabricated housing is having despite the acute and tragic need of veterans and others. But even in the 1930's there was a shortage of housing. The government tried all sorts of pump-priming methods to start a building boom. But they were a failure—why? Because the restrictions agreed-upon by the unions and contractors kept prices so high that the cost of installation was prohibitive. The contractors must bear their share of responsibility for this and for the current situation. As long as they can pass on to

the consumer the extra cost of uneconomic practices seemingly they don't care.

But government, too, must share in the responsibility for these conditions. In New York City if you want a pine-panelled library you must still have plaster under the wood, because of a building code sponsored by the unions involved and adopted by the local government. Why the high cost of bathrooms? Because the plumber's union insists upon hand methods in cutting, threading and measuring pipe on the job instead of in the factory where it could be done more economically by mass production methods and to back this up they refuse to install pre-fabricated pipe. Tacit—and often direct support—of uneconomic practices by employers retards development of allied industries in the building field: steel, copper, zinc, plastics, cement, lumber, glass, insulation, plywood, electric supplies. Without new homes there can be no real prosperity for manufacturers or their employees—in washing machines, stoves, refrigerators, rugs, draperies, furniture, radios, lawn mowers, automobiles, telephones—even shrubbery. The restrictive rules in the building trades are a bottle neck which throttle a host of allied industries.

Jurisdictional disputes are costly. We are all familiar with the record of the unions constructing New York's World's Fair in 1939. At one period the whole project seemed doomed because of these inter-union rivalries. European craftsman here to install special exhibits were so shocked by what they saw of this that as one man put it: "I am ashamed of what I saw. I am a union man in Holland but we have a sense of responsibility. If the American workmen do not show more commonsense and cooperation the union movement in America will end in failure."

All kinds of construction jobs every where are constantly being held up because of jurisdictional disputes. The AFL Electrical Workers refuse to work if the Independent Telephone Workers Union is allowed to do any part of the installation. Thus on some public housing projects tenants have been forced to go without telephones for weeks and months—here in New York City. For the sake of peace employers sometimes agree to pay two crews though only one is used.

Decisions of NLRB

Even more costly and disruptive are such jurisdictional disputes as one finds reflected in decisions of the National Labor Relations Board. There are any number of cases involving manufacturers of

Neon signs where the workers have voted under NLRB supervision to be represented by a CIO union. The AFL then refused to install the Neon signs and employers have literally been forced out of business or into violation of the law because the NLRB has no power to enforce decisions which a union considers adverse.

On the West Coast the Pacific Grower's Association faced a similar situation when the workers in the big fruit and vegetable packing sheds voted for the CIO. The Teamsters union (AFL) then refused to haul these highly perishable products to the railway terminals and the growers faced ruin so they yielded to AFL pressure upon them to violate the National Labor Relations Act.

Equally difficult to deal with have been the strikes of relatively small groups of workers in the automobile and parts industries, for here a handful of strikers in key jobs can cause a complete shutdown of the industry. Housing, automobile production and a host of other industries are still limping along as a result of the last steel strike, for they depend upon a steady flow of basic materials. When this flow moves jerkily there can be no full productivity, many man-hours are inevitably wasted. Society must somehow improve its methods of handling the economic and other causes of disputes in our basic industries.

Psychology as Related to Incentives

My only contribution to a discussion of this subject can be an effort to explain the psychology of labor in relation to incentives. I believe there are three main reasons why labor has often—though not universally—objected to incentive wage plans. (1) Employers have in the main regarded their installation as a function solely of management and have excluded unions from participation in the various steps incident thereto; (2) This has created hostility born of ignorance; and (3) we all know of employers who have cut the rates for the sole reason that they felt the workers were earning too much money. Therefore these systems have tended to be lumped together in the minds of workers and unions as unreasonable "speed-ups." Thus within the past year we have seen a 119 day strike in Ohio to force a manufacturer to abandon piece-work and return to day-work. There are some industries, however, in which incentives have been worked out cooperatively with the unions and have been accepted wholeheartedly. The garment trades here in New York are such an example.

I have said nothing about the inefficiencies of man-

agement which lead to lowered productivity. We all know that the first task of an industrial engineer preliminary to working out a wage incentive plan is to regularize the flow of work, and to eliminate the various inefficiencies that show up under time-study. The most extreme case of managerial inefficiency in my entire experience came to my attention many years ago when I had occasion to inspect a candy factory. I noticed a large amount of candy scattered on the floor around the chocolate enrobing machines. At first I thought some one had spilled a truck load but then I noticed that the small pieces of candy were flying off the moving belt. I asked the manufacturer why he did not slow down the belt as the pieces of candy were so small they were not heavy enough to stay in place at that rate of speed. His answer was: "My father installed these machines and we've always run them this way!" In the meantime, of course, it had become fashionable for women to have that pencil-slim figure and so the candy trade had abandoned the old fashioned large-size chocolates in favor of a delicate morsel. But this change in size and weight had no significance to this employer. I suspect that we can find his counter-part in many places even today

Uneconomic Practices of Labor Stem from Insecurity

Why have these conditions become so prevalent? I believe it is because basically the uneconomic practices of labor stem from a sense of insecurity. Employees are afraid they may work themselves out of their jobs. The old labor union leadership was raised on the "lump sum" theory—that there was only a certain amount of work available. Economic theory has changed. There is a better understanding today of the economic forces at work in society—that technological change by making possible reduction in prices of goods can create a new demand and ultimately employment will increase. But workers have had bitter personal experience with lay-offs in slack seasons, with short work weeks resulting in thin pay envelopes, with the ghastly depression of the 1930's and it is these experiences rather than modern economic theory which conditions their behavior. It is only by recognizing that this sense of insecurity is responsible for the various unsound practices we have been discussing that we shall be able to achieve full productivity. With this knowledge as a base, what can we do?

In the first place, employers must insist upon bringing up as subjects for collective bargaining the

restrictive rules, "feather bed" practices, and all similar limitations. Many a wage demand could be granted if the unions were persuaded to give up these costly practices. But in order to succeed this effort must be preceded and accompanied by management leadership in cooperating with the unions through a sound educational approach to their common problem of increasing productivity and reducing costs. This will require full and frank discussion with workers and their representatives of all the problems of management. During the last twenty years a few unions have attempted to deal with the problem of competition from other industries, from low-cost union plants, and from non-union plants by developing systematic cooperation with management for the purpose of increasing production and reducing costs. Important instances of such cooperation appeared during the twenties in the needle trades, on a few railroads, and in the textile industry. More recently there has been a considerable spread of the policy to the steel industry, the seamless hosiery industry, and elsewhere. The policy is still new and experimental and there is uncertainty concerning the contribution which unions are willing and able to make to the reduction of costs and to the increase of output, and even concerning the willingness of managements to accept the help of the unions.

Part of the difficulty in working out the problem of full productivity stems from employer attitudes. Often they are quite as unreasonably full of fears as the featherbedding union. Some old notions as to managerial "Prerogatives" must be thrown overboard and willingness to work out many problems cooperatively with union leadership demonstrated—if the fears that exist on both sides of the collective bargaining table are to be dissipated.

Management's fear, of course, is that by too great freedom of discussion with labor they will open the door so wide that management will find itself blocked in effective conduct of the enterprise by the necessity for reaching agreement with the unions on a multiplicity of matters. They have been given good cause for this fear. But the solution is not to refrain from discussion but to have more and more of it so that the unions will have a better appreciation of management's problems and of the problems of the industry.

Lack of Understanding Re: Cost Reductions

Most unions do not realize that employers need help in reducing costs or improving methods. It seems to most union leaders and members that employers

are doing these things pretty fast anyway. Up to the present unions have been bitterly opposed by most employers and have had to fight for the right to exist. This struggle has necessarily taken precedence over all other concerns of the unions. To the members who must fight for the right to have a union, the idea of cooperating with their enemy—management—has never occurred.

On the employer side the same psychological barriers have existed. With few exceptions employers have not desired or sought the help of unions in increasing efficiency because they have regarded them as antagonistic, with whom cooperation was out of the question. They have been opposed to doing anything to improve the prestige of the unions. Inviting them to participate in plant management would have this result. Jealous of their traditional prerogatives, too often employers have been more interested in keeping unions "in their place" than in obtaining their help. In their view the worker's function is to execute decisions of management, not to help make them. Any modification of this traditional relationship has been repugnant to most managements.

The most important reason for the failure to develop more instances of union-management cooperation seems to stem from the failure of many unions to realize the close relationship between costs and employment, particularly in the "short-run." They have often assumed erroneously that the employer's costs can be substantially raised without much effect upon the employment of their members. At least for very short periods such an assumption has often been right. But so long as a union bases its policy on the assumption that there is no close relationship between an employer's labor costs and the volume of employment which he gives, it will tend to deal with unemployment among its members by pressing for "make work" rules rather than by pursuing a policy of union-management cooperation.

The distinguished Harvard economist, Dr. Sumner Slichter has referred to the restrictive practices of unions as "a system of industrial jurisprudence" which is not the result of a sinister and evil intent on the part of unions to throttle industry—but rather is a reflection of the conditions in industry which impel unions and workers to take steps to insure their job security. Dr. Slichter says, "Wage earners have many specific purposes in seeking to build up a system of industrial jurisprudence. They wish to protect their organizations against being weakened by employers who might discriminate against union mem-

bers: to strengthen their organizations by making union membership an aid to employment: to allocate limited opportunities to work: to make more work for themselves: to protect themselves against the cost and impact of technological change. Underlying these specific purposes, however, and far more important, is the desire of workers for protection against the arbitrary and uncontrolled discretion of management. It is the desire of the modern worker for such protection which gives real significance to the system of industrial jurisprudence which collective bargaining has built up. Modern business management must expect to operate within this framework of a system of industrial jurisprudence."

Approaches toward Relief of Fear

If we accept the need for union management cooperation as basic, then what are some of the other approaches to relieving the fears of workers, thus releasing their energy and interest in productivity. Guaranteed wages and more adequate unemployment compensation warrant discussion in this connection—and the two go hand in hand. The person who first coined the phrase "guaranteed *annual* wages" did a great disservice to our industrial society. It is that word "annual" taken in conjunction with a "guarantee" that has made so many employers fear to tackle the problem. But if we were to raise the amount of unemployment compensation there are employers who now have achieved such a high degree of regularity in employment that they would be willing to guarantee the difference between the regular wage and the amount of unemployment compensation workers receive through state unemployment insurance laws. Such a plan would greatly reduce the cost of a guarantee. I do not believe in a law that would require employers to make a guarantee, but I do think it should be possible by law to permit a higher unemployment compensation to be paid in cases where the employer is willing to pay the difference between that sum and the customary wage of the worker.

Such a plan would encourage a wider development of guaranteed wages. A worker who is not sure of his next week's pay check is more apt to try to make the job last longer.

A third step in a program for full production involves extension of wage incentive plans. Although labor objection to these plans is by no means uniform and some unions have long since accepted the incentive principle, there remains a substantial resistance,

which, in my opinion can only be broken down by more realistic union-management cooperation.

And now we come to the problems posed by strikes, both jurisdictional and economic.

Conclusion

Our entire legal system dealing with labor strife and the status of unions needs over-hauling.

The Wagner Act should be amended to require unions to bargain in good faith just as employers are compelled to do. Last spring John L. Lewis refused for weeks to discuss any demand until a Welfare Fund was granted. Such a course of conduct by an employer would be held to violate the law of collective bargaining. Another change required is in respect to election petitions. Employers are often caught in the middle of union warfare. Plants are kept in turmoil while one or more unions jockey for position. Sometimes unions strike rather than risk an election. Yet it took a long internal battle led by regional directors who were on the firing-line to induce the National Labor Relations Board to change its rule denying employers recourse to an election. Finally employers confronted with collective bargaining demands from two or more rival unions were allowed to petition. But the problem of the employer threatened by a strike for recognition by a single union remains to be met. Despite considerable justification in the past for its fear of employer petitions filed prematurely to circumvent organization, the Board has erred in refusing on this and other issues to recognize changed circumstances warranting amendments to its own rules and to the Act.

The NLRB policy on freedom of speech should be clarified by Congress. The majority of the Board apparently feels that the employers word carries a threat which is not neutralized by the effective protection enjoyed by employees today or by the secrecy of the Board's elections. Meanwhile many an employer is without protection from abuse of the right of free speech by unwise union leaders. As Gerard Reilly who recently retired from the Board said, "I think an employer should have the right to speak pretty freely to the employees about the long-term effect of unionization of the plants co-relative with the right of the union to say anything it pleases."

Secondary boycotts—long sanctioned by most state and federal courts are being used by labor to defeat the National Labor Relations Law which guarantees employees freedom of choice in the selection of a bargaining agent. Congress is fully cognizant of the

seriousness of the problem and should act upon it in the public interest.

This boycott situation throws into sharp relief the irreconcilable conflicts of law that exist under the NLRA and the Norris-LaGuardia Anti-injunction Act. Although under the NLRA both the board and court are compelled to require the employer to deal with the union elected by the workers, under the Norris-LaGuardia Act the Federal Courts are forbidden to enjoin the losing union from defiance of or interference with the Board certification as long as it confines its attack to striking, boycotting, or picketing. Professor Charles O. Gregory of the Chicago University Law School suggests that Congress relax the Norris-LaGuardia Act to permit injunctions against this kind of union interference under the law. There are other conflicts of law which hamper the development of sound labor relations which can not be fully discussed here.

Economic causes of disputes are even harder to deal with than the types mentioned thus far. Our impor-

tant post-war strikes—coal, steel, autos—have all been over economic issues. Unless management wants an increased control by government in decisions on this type of case—and I do not believe management wants this or that it is socially desirable—we shall have to work harder and more intelligently to develop union-management cooperation, modifying some of our traditional concepts of managerial functions in the process. It is all very well to talk of strengthening the government conciliation service, of establishing labor courts, of utilizing compulsory arbitration in disputes affecting the public welfare, but at best these are only palliatives and carry us further toward a regimented social order. Free enterprise will then be really challenged to survive. However, I do not want to imply that no curbs on excessive power of the unions are needed to prevent abuses. The thing to fear is that the excesses of John L. Lewis may lead to an excess of government control in labor relations and that would be harmful to both labor and management.

Direct and Indirect Incentives—Practical Problems Surrounding Their Installation

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(Mr. Strong's Article Was First Presented as an Address at the S.A.M. Conference, Hotel New Yorker, December 6th, 1946)

I HAVE been asked to talk to you about some of the practical problems connected with the installation and use of wage incentives. This emphasis on the word practical might seem to preclude any discussion of the technical aspects, and, as a matter of fact, I do not propose to go into any technical details as to the methods of time study and standards determination, since they are subjects which have been well and frequently handled by others. However, no discussion of this general subject should be undertaken without at least agreeing as to the objectives we have in mind when we talk about wage incentives and the basic principles which we intend to follow in seeking these objectives.

I believe it is a fair statement of fact that when management contemplates the establishment of wage incentives in any plant it has in mind the desire to obtain one or more of five major improvements: greater production: lower costs: higher wages: better quality: and better control of all of these items. Furthermore, it is my opinion that if management undertakes a wage incentive program with *anything less than all five of these* objectives in mind, it lays itself open to severe criticism for inadequate analysis of the problem and sloppy thinking.

On the other hand, the first four of these five objectives, and on which success of the fifth depends, can only be attained through whole-hearted co-operation on the part of those who are going to work on these same wage incentives. In order to obtain that co-operation there are three basic principles, agreement with which is I believe a prerequisite to success. Management must recognize the necessity of: (1) equitably rewarding individuals or groups on the basis of factually demonstrated performance; (2) paying the highest wages consistent with the marketable value of its product; and (3) creating on the part of every employee affected, a live and active interest in, and understanding of his job.

Millions of dollars are being spent today by industry on methods and procedures designed to bring about

better labor-management relations, and thousands of men are being trained in this field. It seems safe to say that at no time in the industrial history of this country has management been more concerned, and more ready to do something to bring about a better relationship, and mutual understanding. In spite of this fact, however, many well-designed labor relations programs have been rendered ineffective by bungling attempts to apply poorly conceived incentive plans. I do not hesitate to state my belief that any incentive plan that does not meet the foregoing requirements for securing the co-operation of the employee will do much to undermine, if not actually destroy, the best designed plans for better employee relations.

We have outlined management's objectives and certain requirements to meet them, and have pointed out the necessity of obtaining employee co-operation. Perhaps it might be well then before proceeding further, to look at the employee's own objectives in the industrial picture. These may frequently be camouflaged behind a screen of varying demands, depending on the particular bargaining situation of the moment; but I believe there will be little disagreement with the statement that basically the three things which the working man wants, though not necessarily in the order of their importance are: first, recognition by his employer of his contribution to the business: second, proper reward for that contribution: and third, a sense of security in his job. As far as I am concerned, if he is willing to do an honest day's work, I believe he is entitled to all three of them.

There, I believe, we have set up the basis for quite a number of really practical problems. How are you going to get higher production, lower costs and better quality? And how in return are you going to pay the highest justifiable wages for good quality workmanship, which both you and your employee know to have been performed by him as an individual, so that he knows you have recognized his contribution, and will want yourself to keep him on the payroll as long as you stay in business? My answer to that is a soundly con-

ceived and an honestly and intelligently administered wage incentive plan, and personally I do not know of any better method, short of our reaching the millennium, which will meet all of those objectives at the same time.

Analysis of Wage Incentive Plan

Let us review first what we mean by a soundly-conceived wage incentive plan, and let us start with a declaration of the axiom of the incentive engineer: that the individual will do anything of which he is mentally and physically capable if he is given the right incentive. The problem, of course, is to determine what is the right incentive. According to circumstances many different kinds of rewards may prove to be effective: money, position, title, power, or even just public recognition like getting your name in the paper. I had a case once many years ago when I was young and full of crazy ideas, in which a money incentive proved to be entirely ineffective for a group of colored women, due to the fact that the \$1.00 per day which they were being paid—12 1/2¢ per hour—apparently sufficed for all their financial needs. It was obvious that they could produce a lot more than they were doing but cash on the barrel head did not seem to arouse any ambition. We finally settled for a red calico dress for the highest producer each week, and it worked. Unfortunately for me I finished the job and was transferred elsewhere before the local department store ran out of different patterns, so I never did find out and have always been curious about the ultimate result; but I always figured that that was one for the book and must have established a record of some kind or another. However, here we are considering wage incentives and I can assure you that in twenty-odd years of experience the case cited is the only one I have run across in which a fair money incentive was not effective.

There are certain basic principles on which, in my opinion, a wage incentive plan must be based if it is to be considered sound. I am going to enumerate them with a brief comment on each. They are:

- (1) *The plan must measure as directly as possible what the individual does himself.* To be effective the incentive pay must be sufficiently closely related to the individual's actual performance so that he can see the reflection in his earnings of differences in his own performance. This obviously means that wherever practical an individual incentive payment should be used.

Where it is not practical to measure the individual's production separately from that of others, a group incentive is indicated. A typical example of the latter is the operation of a paper machine which may have a crew of eight or ten men, each with a somewhat different assignment, but whose combined efforts result in the production of only one usable product—pounds of good paper.

It has been my experience that when a group plan is used, the smaller the group, the better will be the results. I do not agree with the theory that the good operators in a large group will bring the slow ones up to their level. They try, but after a month or two of indifferent success they generally go the other way and drop back themselves to a lower level, for the very human reason that they don't see why they should break their necks to make money for the guy that does not want to exert himself. It is my opinion that if a group incentive is used where individual production can be measured so that the individual knows himself how much he has produced in relation to the others, the resulting production is apt to be 10% to 15% lower than could be obtained on the individual incentive basis.

- (2) *Measurement must be on a factual basis.* This means first that a specification for the work which is actually to be done including the objectives of the job must be written carefully. The undefined job is the misunderstood and ill-controlled job. With its specifications determined—and that includes not only the method or process followed but the material and equipment used (including feeds and speeds) as well as quality requirements—it is then necessary to time the job accurately and determine what is a fair allowance on which to base a standard. I do not propose to go into a discussion at this time regarding the various techniques of time-study. Many of them are controversial and not properly a part of this discussion.

On the other hand there are certain procedures covering the method of using time studies for the determination of standards which are important. Experience indicates that the use of standard data for determination of basic times allowed for elements of work is definitely superior to the older method of setting job standards directly from time study. There are various

reasons for this superiority, not the least of which are the consistency of standards, the ease with which they can be predetermined before the job is done, which is most important in the case of non-repetitive or semi-repetitive work, the ease of adjustment of the standards to changes in method, material or equipment, and lower cost of maintaining standards once they have been originally set. As against these advantages, it is only fair to say that it generally takes more time and costs more money to establish the standard data in the first place. However, it is my belief that the advantages clearly out-weigh the disadvantages in the vast majority of instances.

Another important procedure is the inclusion in the standards of all work which is regularly and inherently a part of the job, and the exclusion of allowances for anything else. Intermittent delays of whatever nature, provided they are not an inherent part of the job, should be paid for separately at the time of their occurrence rather than having a blanket percentage allowance added to the standard to cover them, as was frequently the practice with the old type of piece work rates.

Still another requirement is the use of *adequate rest factors*. All work is fatiguing to a greater or less extent, and proper allowances must be made to provide for this fact. Both the effect of various factors on fatigue and the amount of compensation which should correspondingly be made are also highly controversial subjects and I do not propose to discuss them at this time. Suffice it to say that medical science has, I believe, already proved that some of the theories regarding fatigue which have been prevalent for a long time are probably based on some misconceptions regarding the physiological causes. Research is continuing in this broad field, but in so far as I know, has not as yet developed better answers as to means of measurement of fatigue which are practical for industrial use.

- (3) *The plan must be fair to both the owners of the business and its employees.* It is a poor trade that doesn't work both ways. That is a well-known principle of business which is certainly applicable to any wage incentive plan. A plan which is set up purely to save money for the company without proper compensation to its

employees is bound to fail, and I believe it is equally obvious that an incentive designed solely for the purpose of increasing wages is a subterfuge which cannot help but fail when the immediate need for that increase has passed. Some of them may have worked, but there have been an enormous number of them which have already gone into the ash can.

I believe it is obvious that the success of any proper wage incentive plan is predicated on the existence of an opportunity for the employees to increase their individual production whether through more consistent concentration on their work, through the elimination of avoidable delays, through improvement of the methods or for some other reason. If, through the combined efforts of management and its employees, the indicated increase in production is attained, it also seems to me obvious that the saving which results from that improvement should be shared as between the two parties to the improvement. This share, I believe, should stand roughly in accordance with the relative contribution by each.

Where improvements in production are the result of technological changes to which the employee has made no contribution and as a result of which he is not actually performing any more work, I see no reason why he should be given a share in the resulting profits. It will probably be obvious from the above, that to me fairness means that each party should be awarded in accordance with his own contribution. Hand-outs, for whatever reason, smack of paternalism and paternalism has never yet paid off in all the history of the world.

- (4) *The plan must be understandable by those who are working on it.* A compensation plan which is too complicated to permit the individual whose pay it determines to figure out how much he has earned, is generally headed for trouble. It was, and perhaps still is, the greatest advantage of a piece-work incentive plan that the operator could tell at any moment during the pay period how much money he had earned. This same simplicity should be a goal to be sought in every sound wage incentive plan. However, in avoiding some of the blanket allowances characteristic of piece work with the objective of arriving at a more accurate measurement of work actually performed, it is not always as

easy to arrive at such a simple calculation. This is particularly true in the case of multiple machine assignments—and one of the problems facing the incentive engineer under such circumstances is how to make the set-up in such a fashion that the man working on the job can figure his own pay. I believe it to be a fair comment that the best results of an incentive will never be obtained from an individual who cannot see the reflection in his earnings of his own variation in effort.

- (5) *The plan must provide a sufficient reward to be interesting.* I believe I have already brought out, although not in so many words, my belief that a good incentive plan must be predicated on the principle of more pay for more work. I do not carry this to the point of believing that if an individual is only doing a half or a quarter of a reasonable day's work, for whatever reason, he should be paid more money just because he finally decides to give his employer a fair amount of work in return for the guaranteed hourly rate he receives. I do believe, however, that he should be paid in direct proportion for all work he produces beyond that point.

How much the average person should normally earn above his base pay when he reaches that level of performance which experience has shown the normal person will attain when on an incentive basis, is again controversial. It is basically dependent on what level of performance is considered to be standard or what is frequently referred to as a fair day's work in return for a fair day's pay, which is represented by the basic hourly rate. Some authorities hold that a 20% addition to hourly rates is ample compensation. Others, with equal vehemence, insist that it should be 25%. My own opinion, which I believe is also shared by many, is that it should be $33\frac{1}{3}\%$, and I might add that some evidence is beginning to appear which tends to indicate that making a still higher percentage of the total pay contingent on work produced, may induce enough greater effort and interest to be well worth the cost. Without attempting, however, to settle this argument, I believe there will be universal agreement that whatever level of performance is selected as a standard requirement, it must be maintained consistently in all cases, and furthermore, while it has not as yet been quite

so unanimously accepted, I believe in the principle of paying full value for all production above that standard.

- (6) *The plan must provide for prompt notification of results obtained.* We human beings have various curious quirks in our make-up. One of them is that we always want to know how we have made out on anything that we have undertaken. Did we win our bet on the World Series? Did we pass that examination? Or did we land that better job we were trying to get? The same thing is equally true regarding the reward for the day's work we turned out. Another interesting thing about human nature is that the further up the line you go, the longer a man is willing to wait to get his reward. For example, a man will sometimes start a new business and continually and consistently put forth his best efforts for perhaps several years in the hope and belief that ultimately he will get the business established and reap the reward of his efforts.

On the other hand, the lower down the scale you go the more frequently the individual must learn how he made out in order to retain his interest and enthusiasm. Not being a psychiatrist, I cannot tell you why this is, but it has been my experience that in order to get the best results the average employee in an industrial plant should be told each day how he made out on the previous day and be paid for his extra effort once a week. The department foreman, in my opinion, should have figures once a week showing the operating results of his supervision and should be paid any bonus earned at least once a month. Others still higher up in the organization should be told the results at least monthly, and paid off in not longer than a three-months' cycle.

I think most of you will recognize the application of the various points I have just made in relation to wage incentives for direct or productive workers. When we talk about wage incentives it is the direct operators that we normally have in mind, and our thinking is generally in relation to productive work. There are, however, in every manufacturing organization a considerable number of indirect employees, many of whom are working in the manufacturing departments and providing service of one kind or another to the direct operators. This group includes for

example, the foreman, his assistants, a time-keeper or clerk, truckers, perhaps set-up men, inspectors, and in different circumstances, several other categories. A well-rounded wage incentive plan should provide an opportunity for additional compensation to people in these jobs just as it does for the producers; and I believe that in practically every instance exactly the same principles apply to the establishment of indirect incentives as to direct.

I am going to leave out of this present discussion any reference to foreman or supervisory incentives, not only because they frequently require rather special handling, but because the next speaker on this program is going to talk to us on that particular field.

Figuring out a satisfactory way of covering the work of the indirect employees in the department is not always easy, even though the principles involved may be clearly established. Frequently, therefore, it may seem like a relatively simple solution to pay these indirect workers a bonus calculated by just taking the same percentage of their base pay as the percentage of premium, or bonus earned by the direct workers of the department. I will agree that this is certainly the easiest way out, but I think you will agree with me that the easiest solution of a problem is not always the right way, or the best way.

In a great majority of instances it has proved to be not only possible but thoroughly practical, to time-study the indirect operations and determine within a reasonable degree of accuracy how much of each of those kinds of indirect work is necessary in order to provide the proper service to the direct operators of the department at any given level of production. Such a standard may or may not be applied directly on an actual count of this indirect work performed, but at least if the required amount of work is carefully determined in this manner, both the amount of bonus paid and the amount of service labor provided can be regulated in relation to the production of the department, a thing which is seldom accurately done where a simple percentage of direct labor bonus is applied to indirect workers' pay.

Perhaps I can give you one or two illustrations of what I mean when I say that indirect operations can be directly timed and paid for on that basis. Let us take, for example, the case of a departmental time clerk who not only has to check the production turned in by each employee of the department, but has to keep an accurate record of time spent by different individuals and possibly perform various other routine functions such as making up production reports, etc. I think it is generally considered unsound to pay

such a person on a basis directly connected with the performance of the department, either production or cost-wise, since as the creator of the source records of both time and production, an opportunity would thereby be offered, regardless of the honesty of the individual, to falsify those records for his or her own advantage. There are, however, frequent opportunities with the use of both ingenuity and time-study, to set direct standards covering such work in relation either to the time cards handled or the number of the people in the department, or the reports made out.

Another illustration might be in the case of a set-up man. Let us assume for a moment that we have a department which includes one or more batteries of automatic screw machines and they are operated on the basis of a machine operator simply running the machines and separate and more highly skilled individuals making the set-ups. A time-study to determine a standard for each different kind of set-up and an analysis of the number of set-ups required per day according to the nature of the work can provide the basis for establishing an incentive based directly on the set-ups made. Under certain conditions the volume of work turned out by those machines for which the set-up man is responsible as distinguished from the average rate of performance of the direct operators, may sometimes be used either alone or in combination with the set-ups made. In either case, the solution is more accurate and more effective than simply giving the set-up man a bonus based on average earnings.

In those cases in which no direct measure of the work done by indirect employees seems practical as the basis for calculating their compensation, I believe the soundest method to be the establishment of a money budget calculated from a careful analysis of the actual work required for any given level of production, with the amount of payment regulated by actual performance against that budget. I think it is a fair statement to say that careless and sloppy thinking is no more justified in the case of indirect standards than in the case of direct. Careful study and analysis of indirect work, including again the objectives of the job, plus a little imaginative thinking, will generally produce a solution which will not only provide a satisfactory basis for indirect incentives but will also provide management with an excellent control of indirect costs.

Wage Incentives Not Cure-All

Many people are prone to believe that if they can only have a good wage incentive installed, all their troubles will be cured: production troubles, wage

troubles, costs, labor relations, and what have you. I am sorry to have to disappoint such confirmed optimists—but it just isn't so! Wage incentives are no cure-all for anything! They do however—or perhaps I should say the controls which can be obtained through the use of wage incentives—constitute a tool for management use which can be of inestimable value. Like any tool, however, if not used—or improperly used—it can be of no value or perhaps even be dangerous. Properly installed and well administered, a good wage incentive plan can provide management with the following controls:

1. It will provide a factual and intelligent basis for better control of labor relations.
2. It will provide a control of both labor and material costs which is constantly up-to-date and in accordance with current operations on the product.
3. It can help to increase earnings to a preferential level while maintaining competitive unit labor costs.
4. It can help to locate irregularities in operational procedure so that necessary corrective action can be taken.

One more point remains to be covered. No good wage incentive plan can be installed in careless fashion, or in a hurry. It takes time to prepare the organization, to take the time studies, to set the standards, and to make the application. Furthermore it not only takes time but there will be many problems to be solved before some of the poor operating conditions which, if they exist, will be shown up by the incentive, can be corrected. It can't be done right and still be done hurriedly. This, therefore, leads us to a discussion of what we mean by honest and intelligent administration of a wage incentive plan.

Any new idea which is to be introduced to an organization must be sold. I am not using that word in the sense of somebody being "sold down the river," or "sold a bill of goods," but in the sense that the members of the organization must be convinced, after a thorough understanding of what is proposed, that the contemplated plans are sound, practical, and for the ultimate good of all concerned. Since the introduction of a wage incentive plan into any plant, even if it is only a revision of some plan which has been in existence, is still something new, it therefore must be sold to all concerned. It can neither be sold nor stay sold, in my opinion, unless certain conditions are met. Those conditions are the ones that will provide some assurance that the proposed plan will be honestly and

intelligently administered. I am going to enumerate those conditions and, in this case also, make brief comments on each one.

- (1) *Management must understand and be thoroughly conversant with the principles involved in the wage incentive plan as well as with the methods which are to be employed in its establishment and application.* This does not mean that the president of the company must know how to go out and take time studies and set standards, or be trained personally to perform any of the other detailed functions in connection with the plan. It does mean, however, that he should have, as all of the top executives of the company should have, a thorough working knowledge of how the plan works. One of our Union friends, I think at one of these meetings last year, made a very pertinent point along this line—with which I am in 100% agreement. He pointed out, with appropriate ridicule, the stupidity of attempting to make a wage incentive application which management admitted was too complicated for it to understand. That may sound like an impossible situation; but unfortunately it is not. I have heard management say, and so probably have you, in answer to some question about how the incentive plan worked, "Oh, that is too complicated for me to understand—you will have to get the time-study man to explain it."

I wish to state unequivocally my opinion that if the plan is too complicated for management to understand then it is either too complicated to use, or that management is too dumb to hold down its job! As a matter of fact, the latter is seldom the case, the real answer being that this particular member of management was not sufficiently interested to find out what it was all about, or was mentally too lazy to take the trouble to learn.

- (2) *It is essential if a successful wage incentive application is to be made that supervision should be thoroughly familiar with the plan.* This includes both its objectives, its methods, and its manner of operation, so that all members of the supervisory staff from the Works Manager down through department foremen will know what it is all about and be in a position to answer intelligently questions which will be asked by their subordinates. This will invariably require some instruction and training, and failure on the part of management to recognize the necessity for

this and take the trouble to provide such education will often militate against getting the expected results.

- (3) *A properly established and clearly defined organization is another prime essential.* I have pointed out the necessity for having specifications clearly written defining the direct and indirect labor jobs. Many manufacturing organizations stop writing specifications at that point and depend entirely on word-of-mouth instructions for teaching a foreman, for example, what his job is and how it is to be performed. To be sure, some concerns draw up a nice-looking organization chart with job titles and indicated lines of authority and assume that that will be sufficient to keep everybody in his proper place and performing his own job effectively. In my opinion nothing could be further from the truth; and I make that statement because so many times I have seen just that sort of situation and found that the organization which was so nicely described graphically did not actually function as even a reasonable facsimile thereof.

I believe that every organization, whether contemplating the installation of wage incentives or not, should have clearly written job specifications for every position from that of the president to that of the sweeper. These specifications should define the duties, responsibilities, and the authorities of each job. These definitions should be in sufficient detail to leave no question in the mind of any incumbent not only to whom he reports, but who reports to him, what he is supposed to do, how and when he is supposed to do it, and what are the limits of his authority. Without such specifications crossed lines of authority, unwarranted assumptions by some, buck-passing by others, and general confusion are, in my opinion, inevitable.

That sort of atmosphere is not healthy under any conditions, and least of all when a wage incentive application is contemplated. I do not propose to start any elaborate discussion about what type of organization should be set up because I do not believe there is any general rule that can necessarily be applied to all situations. I believe myself in the so-called Line and Staff type of organization with the line functions having the responsibility for executive action at the various levels, and staff functions established for the primary purpose of providing

necessary services to the line. I bring the question up at this time only for the reason that in the installation of a wage incentive plan the establishment of a new function within the organization is obviously necessary, and unless duties and responsibilities of the organization as a whole are clearly defined the injection of this new function may easily lead to confusion.

The function to which I refer, by whatever name it may be called, Industrial Engineering Department, Standards Department, Cost Control Department, *is that of establishing and maintaining standards on which the wage incentive plan is based.* It is an important function since on its work depends both labor costs and employee earnings. It requires *good men properly trained.* Well organized, and effectively manned, it can become one of the most useful functions in the entire organization. It is essential that it be so incorporated into the organization that it can function properly with the co-operation of all of the other staff and line divisions but without domination by anyone below the level of the highest manufacturing executive in the organization. To set this function up otherwise is to impair its ultimate usefulness.

- (4) *The establishment of company policies.* Every organization has established policies. Many of them fail to take the trouble to write them down and make still less effort to see that all members of the organization know what they are. This attitude reminds me a little bit of that line from THE CHARGE OF THE LIGHT BRIGADE:

"Theirs not to reason why,
Theirs but to do and die."

If we concede that the co-operation of all members of an organization is essential if the best results are to be obtained, how does it make sense not to tell the members of the organization what it is we are trying to do?

We can, of course, assume that our employees know that we are in business to make money, and, since they are working in the plant, they can't help but know that our product is rubber boots, or sealing wax, or mouse traps, or what not. To be sure, those are reasonable assumptions—but is that all the information we are going to give our employees? Is it enough to obtain their interest without which their co-operation cannot be obtained? To be sure, they

know we are in business to make money—but what are the basic policies on which we propose to accomplish that? Are we going to make the highest possible quality merchandise of which we are capable and sell it to a comparatively restricted market at a high price and make the desired profit on a big mark-up with a small volume, or are we manufacturing in large quantities in a highly competitive market? Or are we running a “gyp joint” putting out inferior quality for a quick cash turnover and hoping to change the product to something else before the trade catches up with us? Anyone can see, of course, that if that were your policy you wouldn’t stay in business long, nor would you care to advertise it. On the other hand, some of you would be surprised to know how many people working for employers who do not take the trouble to keep their employees informed as to their policies and business principles have a notion that that is the kind of ethics their employers are inclined to follow.

Consequently I want to make the point that unless management is ashamed of the principles on which it does business and the policies which it has established for its own operation, there is every reason why those principles and policies should be written down and put in the hands of every employee—and I can assure you that if that is done and then management rigidly adheres to the policies which it has stated, there is going to follow an immediate improvement in employee understanding and co-operation with management’s objectives.

- (5) *A willingness on the part of management to provide adequate guarantees.* When management undertakes the establishment of wage incentives, there is perhaps a natural suspicion on the part of its employees that this is a program which is purely for management’s benefit. If management is honest and sincere in its desire to establish a successful wage incentive plan, it can well afford to take certain steps to assure its employees that the whole proposition is on the level. The first thing the average employee is afraid of when he is put on incentives is that if he makes a really good day’s pay the rate will be cut. Unfortunately, that suspicion is well grounded. In many plants in the past, especially those working on piece rates, cutting rates when somebody made a little more money

than was expected was the regular order of business. The necessity for cutting rates is the direct result of carelessness in setting them in the first place. On the other hand, if the rates are the result of careful study and analysis and are based on sound time-study, they can in a vast majority of instances be set correctly the first time and, barring changes in the job content, there is no reason to change them.

Therefore, and I believe it to be a most important point, when rates have been competently determined, management should guarantee them against reduction as long as the job remains the same. Furthermore, if management has confidence in what it is doing—and if it hasn’t it had better not start on the program in the first place—that guarantee can and should be put in writing over the signature of the chief executive, and a copy of this guarantee should be posted where all can see it. Even so, many employees will not believe it since they will reserve their acceptance for a while on the basis that “actions speak louder than words.” Any way you look at it that is a sad commentary on the failure of many managements to convince their employees of their own integrity.

Again when management undertakes a wage incentive program and sells its employees on the fact that it is going to be a good thing for all concerned, it seems to me that it is implicit in that proposal that the incentive plan will be maintained on an equitable basis. To be sure, no management would undertake seriously to go into a program of this nature unless it intended to continue it—but good intentions as such do not prove anything. It seems to me that it is a measure of management’s real integrity as to whether or not, having undertaken a program such as we are discussing, it not only intends, but really does, maintain it throughout the years.

I believe it is probably a fact that a great deal of the wage incentive work being done by Industrial Consultants in the country today is, in one way or another, concerned with trying to revise, or re-establish, or save something out of the wreckage of some incentive plan which was well conceived and properly installed originally, but which is now in a mess due to the failure of management, for whatever reason, to maintain it as it was originally agreed would

be done. Good management will not start something it is not prepared to carry through.

- (6) *The understanding and co-operation of the Union must be obtained.* I have made the point that if a successful application is to be made, both the understanding by, and the co-operation of the supervisory staff are necessary. If the employees of a plant in which a wage incentive application is contemplated are represented by a Union, it is equally essential that Union representatives should be familiar, and in agreement, with the purposes and objectives of the whole plan. In no other way, in my experience, can employee co-operation be obtained. I know that many of you will say that obtaining Union co-operation in the installation of a wage incentive plan is impossible. I should like flatly to deny any such allegation. I will admit frankly that it may be difficult and that the amount of difficulty will increase in geometric ratio with management's failures in the past to deal frankly and honestly with its employees. If the record has been bad, in that particular instance it may be impossible, but if that is the reason for the failure I maintain that it is management's fault and not the Union's.

I do not mean to imply by what I have said that it is easy to sell employees, whether members of the Union or not, the fact that the

establishment of a wage incentive is going to be as much for their benefit as it is for the benefit of the company. I do maintain, however, that just because a man joins a Union does not make him into any different kind of a human being than he was before, and if you have a clear-cut, open and above-board business proposition to make to him, with nothing to conceal and everything up on top of the table, you can convince him that it is to his advantage to play ball—if it really is. If your proposition is a fair and honest one you will ultimately be able to convince him. If it isn't—you had better not try!

I made the statement earlier in this discussion that I believed many soundly-conceived labor relations plans had been wrecked by bungling attempts to install wage incentives. I would like to close my remarks on this whole subject by stating that it is my belief that a soundly-conceived and an honestly and intelligently administered wage incentive can do more to promote good labor relations than almost any other program which management can adopt. It will provide a factual basis for the determination of a fair rate of compensation, for the elimination of grievances at their source, for the recognition of each individual's contribution, and for real job security to the individual who is sincere in his desire to work for a living.

Cost Reduction through Better Utilization of Tools and Equipment

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(Mr. Bayer's Article Was First Presented as an Address at the S.A.M. Conference, Hotel New Yorker, December 6th, 1946)

Introduction

INDUSTRY'S need for more productivity from the better use of tools and equipment seems to become more urgent with the passing years. Before the recent war, the need was stimulated by an economy convalescing from the most serious depression the world has experienced. And before the depression was fully overcome, the need for greater productivity obtained a new stimulus from the unprecedented demands for large volume of War material. Now that we have entered the post-war period with a public debt measured in astronomical figures and a resulting tax burden absorbing very nearly all of the meager profits possible, the need for greater productivity is more urgent than ever. Greater productivity is the only means industry has today in obtaining a more favorable ratio of profit volume, thereby guaranteeing a profitable return on investment. To accomplish this purpose, industry must take advantage of all possible cost reductions without jeopardizing production volume.

Since my experience has been gained in organizations with small lot production, I shall endeavour to convey my observations and concept of the solution to cost reduction through better utilization of tools and equipment. Most organizations, in my opinion, attack the problem from too small a scope, as for instance, through the channel of a new special tool program, or perhaps through a revitalized plant layout program. Viewing some of the final results and ultimate expenditures, however, few seem justified when judged by the true savings made. Consequently it is my sincere belief, that a program of cost reduction through better use of tools and equipment must be on a broad scale involving all plant divisions that service the shop and therefore affect the shop efficiency directly. This belief is founded upon the experience, that since a manufacturing organization consists of several basic divisions, each within their own limitations and responsibilities must function harmoniously and co-operatively in order that an efficient and economical

shop organization can be realized. Should but one of these basic divisions fall in disharmony with the total group, the best planned program cannot in full measure succeed.

Let us, therefore, direct our attention to these basic plant divisions by enumerating them in their usually accepted order.

- (1) Engineering
- (2) Methods and Standards
- (3) Tool Design and Control
- (4) Production Control
- (5) Manufacturing or Shop
- (6) Inspection

Each division in its own right has a definite purpose and a responsibility to the organization as a whole; which, if properly administered, will assure the highest possible overall shop efficiency. The proper approach to higher shop efficiency, therefore, is to organize and train each division to understand clearly their purpose and responsibility and to direct their activity toward the desired goal. How such an overall program of re-organization can be carried out and what adjustments can be made to assure harmonious flow of responsibility is our purpose. Each division shall be discussed separately.

Engineering

The Engineering Division is invariably granted control of product design and in addition, responsibility for the preparation of necessary shop drawings. May I here point out one important fact not usually realized to the fullest extent; that of all plant divisions none has as detailed an understanding or knowledge of the product as the Engineering Division. It should, therefore, be their prime responsibility to convey this understanding and knowledge to all other divisions through the medium of shop drawings embodying well established engineering standards. Such items as, surface finish, alignment, parallelism, squareness, accuracy, fits, concentricity, should all be standardized and these standards intelligently applied on each shop

drawing in order that no detail is left undefined. Dimensioning practice should be well controlled; for too many dimensions, or dimensions wrongly applied can cause misinterpretation in the shop with the obvious and well known results. Too many dimensions, or dimensions chained into long strings suffer from the danger of accumulated errors. It is important, therefore, that the Engineering Division understand that the dimensions should be so established as to guide the Methods and Shop Divisions to produce each part as required.

In addition, the Engineering Division should have a general familiarity with the various processing methods such as planing, milling, turning, grinding, mainly those characteristic to their particular shop, in order that they can judge designs in the light of easy and economical manufacture.

Consider that the Engineering Division can either lead or mislead the whole plant organization; for all plant functions are guided by the shop drawings. If the information on the drawings is weak or lacking in any respect, all following plant functions are subject to misinterpretation with resulting inefficiencies in the form of poor and costly processing methods, ineffective tooling, inefficient use of machine equipment, large percentage of reworks and salvage, prohibitive scrap, and finally weak and ineffective inspection.

By now it should be readily apparent that Engineering activity can and does influence shop productivity and the use of tools and equipment.

Methods & Standards

The Methods & Standards Division is our next consideration. Being an important service unit to the shop, they should be granted full control of processing methods exercised in harmony with tool design and the shop. They should be capable of establishing accurate and just time ratings for each operation. They should have a clear understanding of the use of each piece of machine equipment and tool in the shop. They should ever be cost conscious and actively seek greater economy in production methods. If properly established, they can become a co-ordinating unit blending together activities of all other plant divisions affecting the shop. For example; if the design developed by Engineering is impractical and costly from the standpoint of manufacture, they should vigorously advocate changes. If the information on shop drawings is vague or undefined, they should demand corrections. Through their close association with the shop, and through observation of shop performance against

their methods and time ratings, the Methods Division is in a position to uncover the causes of most inefficiencies. Such circumstances as poor tooling, poor machine maintenance, poor shop supervision, production control interferences, poor inspection policy, are certain to come under their observation. It should, therefore, be a part of their function to convey these findings to responsible individuals in the organization so that steps are taken to correct the causes of these inefficiencies.

In order to function as just described, the Methods Division must have specific tools to work with. These tools must be in the form of information upon which their activity and judgment are based. To obtain this information, a survey of the plant should be made and the characteristics, capacity and use of each piece of machine equipment cataloged. A set of time standards for each machine center should be developed and organized for ease in rating jobs through estimating rather than through actual time studies. Practical speeds and feeds for all materials used in the shop should be established for each machine center, and made available to the shop as well as for use in the Methods Division in rating jobs. A simple but effective paper routine between Methods, Tool Design and Shop Divisions must be developed.

Having this information available and a good basis of operation, the Methods and Standards Division can definitely assume a guiding role. They now have a means of establishing processing methods coherent with plant facilities. Rating of jobs can rapidly proceed through accurate estimating using available time standards, speeds and feeds. Having a clear conception of the method, it should be their function to recommend the need for special tools. Their ability to evaluate comparative performance on each type of machine equipment, should gain for them control of the selection of new equipment. If the shop has difficulty in following the methods prescribed or if the rated time can not be met, the Methods Division should voluntarily investigate, make corrections in method or time rating if found necessary. Or should the circumstance reflect an inefficiency due to causes traceable to other service divisions, they should aid the shop in obtaining an elimination of such causes. The greatest service that the Methods and Standards Division can give to Management is in the capacity of an impartial, fact finding group upon whose facts management can formulate plant operating policies directed toward higher productivity.

The individual selected to guide this division should

be energetic, alert, and actively engaged with outside organizations and groups interested and investigating new ideas in processing methods with the purpose of keeping abreast with most recent and best present day practices.

Before continuing to the next division, may I stress the need for a strong and effective Methods and Standards Division; for it can do more than any other plant division in guaranteeing high productivity, a more efficient use of tools and equipment.

Tool Design & Control

The next division to come under discussion is Tool Design & Control. Most plants find it difficult to control overall cost of special tool programs and seldom succeed in staying within estimated budgets. It is my belief, however, that special tool costs can be controlled provided the control is exercised not alone on overall budget, but also through careful censorship applied at the source. For instance; let me ask, "Why is a special tool necessary?" There are three and only three sound reasons;

1. To reduce manufacturing cost.
2. To obtain better quality.
3. Or because manufacture is not possible without a special tool. This then, should be the basis of exercising a censorship at the source which is on the tool design board. If none of the above reasons can be found to justify the tool, then it should not be created. In addition, one other consideration should be made; if the special tool is found necessary, its allowable cost should be estimated based on the possible annual savings, or the possible annual volume which ever will serve as a measure. The design then should be such as to stay within this estimated budget. To put it more simply, before building any special tool, determine first whether it is necessary and if it be so, then be certain it is so planned as to pay for itself. Judging each tool accordingly, control of tool budgets is possible.

In order to put this idea into effect, it is necessary to maintain close relationship between Tool Design and Methods Divisions. As pointed out earlier in this discussion, the Methods Division is best qualified to determine whether a tool can pay for itself; and consequently should make the recommendations where special tools are required. The Methods Division should also report to Tool Design all difficulties with tools found in the shop, as many tool designers fail in their mission by making the tool awkward to handle. Hence the savings predicted through its use

do not materialize. Whatever gains are made in machining time are lost in manipulation of the awkward tool.

One other important contribution that Tool Design can make in lowering tool costs is to keep a careful catalog of each tool and institute a plan of universal use of these tools by borrowing them from job to job wherever possible.

A word about control of commercial or perishable tools and accessory or utility tools. These classifications cover items such as drills, reamers, taps, lathe tools, grinding wheels, chucks, tool holders, etc. Unless well controlled and maintained, they can cause considerable and excessive recurring costs. Many organizations allow the purchasing division to exercise control of these tools with the thought that this division can control the cost through economical buying policy. Experience has shown, however, that they are ineffective inasmuch as they are unfamiliar with the true shop needs. An overabundant variety and brands of such tools begin to permeate the plant, as the purchasing division is easy prey and defenseless against clever sales representatives because of their lack of proper knowledge. Variety is an expensive, inefficient luxury, and the converse of standardization.

Sound judgment, therefore, dictates that best control of these tools can be realized through a shop representative operating under the guidance of the Methods Engineer. It should be his responsibility to test under shop conditions, select and standardize this type of tooling. Included with this function should be the responsibility of maintaining and distributing these tools to the shop as needed. This duty to constitute tool supply control and tool grinding and reconditioning.

Production Control

The fourth division on our list is Production Control. A well organized Production Control can do much in obtaining an efficient use of machine equipment. To function thus, however, it must be based on a well instituted system of machine load balance and a carefully planned production schedule which coincides with the fixed machine capacity available in the plant.

To allow the machine load to fluctuate gives rise to a condition whereby some machines become overtaxed, hence behind schedule; while others are starved out and forced to drive ahead of schedule in the attempt to keep busy. This in turn creates shortage items at the overtaxed machines and a pile up of excess stock items from the machines driving ahead. As-

sembly departments are forced out of tune with the planned shipping schedule, and storage of the temporary surplus items presents an expense problem.

The Production Control Division should, therefore, have the responsibility of scheduling and dispatching shop orders through each shop department. A note of caution, however, their production order dispatchers or expeditors as they are sometimes known, can be the cause of considerable production interference unless restrained. If they have the freedom of breaking into setups or otherwise disrupting the predetermined production schedule, all the careful planning on the part of the Methods, Tool Design and Production Control Divisions will fail to materialize as cost reductions. My experience has been that plans can only be effective when executed as originally planned.

The policies and basis upon which Production Control schedule planning activity is carried on, should be co-operatively established by the Chiefs of Production Control and Sales Divisions taking into account the available plant facilities and capacity relative to business expediency. They should formulate a flexible general outline upon which Production Control can operate.

Summarizing then, the Production Control Division should be responsible for schedule planning based on machine load balance; and dispatching the jobs through the shop departments with the purpose of obtaining the best possible productive efficiency out of each machine.

Manufacturing

We are now prepared to discuss the Manufacturing or Shop Division. Fundamentally it is the one most closely allied to the problem of efficient use of tools and equipment. For, though the other divisions play an important role and, in my opinion, a critical role, they are and must be considered indirectly productive as service divisions aiding the shop in obtaining the desired production. The shop, on the other hand, is directly productive and, therefore, directly responsible for carrying out the plans submitted by the service group.

To the present our discussion has conveyed the thought that the service divisions have a very important influence on the use of tools and equipment in the plant. We have established that their responsibilities are, to prepare well conceived plans with which the shop can obtain a high productivity. Our present purpose then, should be to determine by what means the shop can put the plans into affect.

First, however, to comprehend the shop problem, we must understand our purpose or goal. This is best explained by the theory that high production exists when and only when the machine is removing the maximum amount of material possible with the best tools and setup conceivable and in the shortest possible time. And by converse, zero production is reached when the machine is idle, even though the operator may be hard at work.

Hence the proper approach to high productivity in the shop is to reduce to a minimum the machine operator's manual functions between cuts, during loading and unloading and even between setups in order that the machine can be kept running as constantly as possible.

What can be done to make this a reality? Here are a few of the basic principles. Each operator must have at least one job before the current job is completed. The parts must be at his machine. All required tools must be ready and in good working order. The cutting tools should be sharpened. The machine must be kept in good repair and well lubricated. The operator must have ample space around his machine to permit freedom of movement and to store his finished as well as unfinished parts. He must be given positive information regarding speeds and feeds. His responsibility toward the part being machined should be clearly conveyed in order that his actions are immediate and positive.

It should now be readily apparent what the duties and responsibility of the foreman are. It is his problem to obtain and maintain the conditions just described surrounding the machine operator. He should make demands upon the superintendent who in turn should see to it that all service groups provide the necessary aids to productivity.

To function efficiently, however, the foreman must be shorn of all hindering duties and activities such as order scheduling, time keeping, or any other time consuming paper routines. These should be delegated to other divisions or clerks. The foreman must be free; he must have time to plan his departmental activity; he must have time to observe his men and make certain that each operator is working efficiently. It is his job to keep the departmental house in good order, and operating efficiently.

Inspection

The last division to come within the scope of our discussion is Inspection. The Inspection division should have the responsibility of maintaining the level of quality and if properly organized, they can also act

as instructors to the machine operators. Most inspection policies are based on the principle that their purpose is to find the sub-quality or machining errors after the pieces leave each operation. A better policy would be, however, to inspect during manufacture and intercept errors immediately before large numbers are made. In this way, errors caused by faulty tools, faulty setup, operator's misunderstanding or carelessness can be quickly caught and corrected. Here is the point at which the inspector can indirectly effect the role of instructor, for most errors are not deliberate but caused by the operator's lack of understanding.

It should be noted that the responsibility of inspectors is to maintain the level of quality; they should not be permitted to establish the level of quality. The level of quality is the responsibility of Engineering and as already stated, should be established in the form of engineering standards properly applied on the shop drawings. The level of quality is composed of and controlled by standardizing such details as, tolerances, surface finish, alignment, parallelism, squareness, concentricity, etc. All of these items should be well defined on the drawings, and inspection should merely be a duty of judging that each part of the product is produced to these standards.

Inspection, if improperly organized, can seriously affect the shop productivity; for productivity is measured by the volume of shipments in ratio to shop hours expended. Conceive the reaction on shop productivity when the level of quality is established by the Inspection division on daily varying standards, and by individual inspectors, each of whom has his own conception of the quality desired. Immediately shop operators become confused since their best efforts do not continually produce acceptable pieces. Large amounts of reworks and salvage begin to appear, most of which are done to suit the fancy of an inspector. High productivity can not continue if rejected work begins to back up and take precedence over incoming new jobs. Reworks and salvage require a fresh setup which can not be amortized by the few pieces involved. The tools required are not prepared as the job is not within the planned schedule. The whole circumstance of rework is in disharmony with efficiency. Reworks and salvage are expensive. Machine productivity is at its highest when jobs are done once and correctly.

Summary

In summary then, I have attempted to show that the task of increasing productivity through the better utilization of tools and facilities must be undertaken on a broad plant-wide basis, if substantial gains are to

be made. The purpose of the task should be the welding together of six major divisions into a well co-ordinated unit. And, as pointed out, each division has obligations and responsibilities when properly defined and administered, will result in the highest possible productivity.

Reviewing again the six divisions in brief:

(1) Engineering, as the initial division affecting all plant functions, must have a designing and drawing policy established upon practical and well defined standards. The knowledge they have of the product, should be clearly and fully conveyed through the medium of shop drawings.

(2) The Methods and Standards division has a two-fold function.

(a) To devise and develop means by which the manufacturing division can meet Engineering requirements effectively.

(b) To determine and set up fair time ratings on all manufacturing operations to assure the control of manufacturing costs.

(3) Tool Design and Control being functions closely allied to Methods and Standards, must, therefore, also be closely co-ordinated with this division. They should be guided by Methods and Standards division in forming their pattern of activity in order that tool costs are kept at a minimum yet serving the need in the shop.

(4) The Production Control division should be able to meet the demands of the Sales division within the predetermined expectancy of management based on work load ahead and machine capacity in the shop. The emphasis should be on a well constructed system of machine load balance, which in accordance with general accepted practices is an order entry and follow up system that allows the shop to devote the maximum amount of their time to the job of making quality parts at a reasonable cost.

(5) The Manufacturing division should be responsible for quality production at reasonable cost. It involves proper equipment, suitable jigs and fixtures, well-conditioned cutting tools of needed types in sufficient numbers, a well-directed job and tool service group, a convenient arrangement of shop equipment and supplies. And above all, shop supervision must have enough available time and assistance to respectively supervise, guide and teach both skilled and new unskilled employees.

(6) Inspection should have the assignment of maintaining and only maintaining a level of quality

established by the Engineering division and conveyed by the shop drawings.

Conclusion

In concluding this discussion, may I make a few general statements.

Since advocating a complete plant survey when attempting to increase shop productivity, I should warn that it is in itself, an expensive, an extremely difficult and lengthy job. Those who have tried it will agree.

Therefore, before embarking on such a program, it should be understood and accepted as such. The will to carry it to a successful conclusion must remain strong, irrespective of seemingly hopeless and insurmountable problems encountered.

And too, let me warn the representatives of man-

agement, that paper systems or paper organizations never succeed unless the ideas and plans set forth on paper are brought into reality.

The initiative to undertake such a program must rest with Management. But once on the road, they must be prepared to support it morally and financially, whatever the obstacles. Intangible expediency should never become the safe refuge of Management against strong personalities or opinions proven to require readjustment.

Time did not permit more detailed explanations or illustrations of how some of the common problems can be overcome. I have, however, endeavored to digest and offer to you the essence in an overall picture, pointing out the need for plant wide co-ordination when higher productivity is the ultimate purpose.

The Role of Labor in Modern Industrial Society

By CLINTON S. GOLDEN

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(This article was first presented by Mr. Golden as an address to the Annual National Fall Conference on Human Relations, October 31, 1946, Pittsburgh)

A DYNAMIC industrial society creates constantly changing forms and patterns of life and relationships. If one takes into account the changes that have occurred in the relationship between owners-managers and wage earners since 1870 when the corporate form of business organization came into being, the constancy of change is clearly evident. If change during the past decade is viewed separately, the descriptive term "revolution" becomes almost an understatement.

Fortunately there are those who seek to understand change and adjust to it rather than blindly resist it and I have always thought that the Society for the Advancement of Management has among its members a generous share of such people.

The fact that this conference is built around the theme of Human Relations is evidence of my awareness that consideration of human beings and their relations with one another counts for far more today in the formulation of policies and decisions than has been true in the past.

Generally speaking Unions in our industrial society came into being as protests against injustice in some form. They represent the expression of a primitive instinct deeply rooted in human beings. I suppose the anthropologists would call it the "herd instinct" because at some time in the dim and distant past, primitive man found strength and safety when he joined with others in seeking effective protection against predatory enemies.

This instinct which has been subject to whatever refining influences are present in what we call civilization, finds expression in the organization or association—for whatever purpose—of human beings today.

In a much earlier period in the evolution of relationships between men, the master and servant concept of relationship between employers and employees took form and became sanctified by common and statutory law centuries ago in England, long before the beginning of that period in history we describe as the Industrial Revolution.

With the extension of education to embrace a constantly increasing number of people, the concept

of a master—servant form of relationship becomes completely incompatible with our modern concepts of democracy.

However much our current industrial conflicts may be thought by some to stem from the desire for immediate personal material gain, the basic, although not always clearly stated desire, of most workers is to count for something—to be recognized as human beings and not as mere cogs in a huge impersonal machine called "business" or "industry."

This has not always been true because in an earlier period of our development, society and the relationships between individuals therein were simpler, more intimate and direct. Then the individual worker knew the boss or owner, had ready access to him and was frequently a neighbor. Complaints or other matters of concern could be readily and easily communicated to one possessing both the responsibility and authority to do something effective.

The impact of the change from the small town, small unit type of social economy to the great industrial area type has not been recognized, let alone understood, by most management executives.

"Historically and traditionally" says Dr. G. Elton Mayo of the Harvard University Department of Industrial Research, "our fathers worked for social cooperation—and achieved it. But we after a century of the most amazing scientific and material progress, have abandoned the effort by inadvertance, it is true, and we are now reaping the consequences."

The complicated and devious channels of communication and consultation that are characteristic of our present large scale units of enterprise did not exist in those days nor was there need for them because the individual could gain recognition readily and therefore, identified himself more directly with the operation of the enterprise which provided him with employment.

The corporate form of organization personifies not only the rise and dominance of industry on a vast scale but the concentration in a comparatively few people, of a vast power over the lives of millions of fellow human beings.

The very strength of the corporate organization frequently makes it impervious to the interests of the individuals who, as stockholders own it; to the requirements of the human beings who as employees enable it to function; and to the needs of consumers upon whom it must ultimately rely for the use and consumption of its output.

The concentration of such economic power is not compatible with our concepts of freedom and democracy. To correct this workers organize and seek to introduce democratic influences and procedures into industrial operations. This they call "industrial democracy." It represents a very direct challenge to the exercise of autocratic power.

Basically this is at the root of much of our industrial conflict. In our political democracy we have learned that a people cannot survive half slave and half free. Because industry is so intimately related to the well-being of all, workers increasingly feel the need of more democracy in industry.

We are beginning to learn that our economy cannot survive and function efficiently if the participants are without the freedom compatible with the American citizenship.

"The aim of true democracy," says Dr. Harrison Sackett Elliott, "is to secure the active participation of every individual up to the limit of his capacity in the conduct of all his social, vocational and political affairs . . ." This aim of democracy as stated by Dr. Elliott expresses what I believe to be the aspiration of all thoughtful workers and Union members. If this is a desirable goal, our problem then becomes one of concern as to how it may be more nearly achieved.

It is my conviction that we must first begin with people in their places of work. If they want to organize into unions and deal with management through their own freely chosen representatives, that is both a natural and moral right which is now quite properly safeguarded by law.

When this determination has been made management has a primary responsibility for making the necessary psychological and physical adjustments that will permit the development of the best possible relations between the management and employee groups. I say a "primary" responsibility because the kind of human relations that will develop will depend largely on the capacity for adjustment and the wisdom and skill displayed by management in what amounts in most instances to a new and unfamiliar type of human relations.

Management must not only provide the opportunity

for each individual to participate to the limit of his capacity in the common endeavor, to make the enterprise which provides employment for both management and the workers a success. It must also acquire and make use of the necessary leadership and social skills that will in turn be directed toward enabling not only each individual employee but the Union of such employees to identify themselves with the operation of the enterprise at the work place level. Management is the symbol of the power of ownership and the custodian of the authority that flows from ownership.

Until the relations between the individuals in the management organization and in the workers organization are on a sound and constructive basis in the workplace, it cannot be expected that they will be uniformly and permanently improved at the higher levels of relationships in the industry and nationally.

If management possesses what I believe to be the primary and major responsibility for initiating and developing genuinely cooperative relations, more attention must be directed toward training and equipping management people to meet these responsibilities.

In support of my conviction that management has a *primary* responsibility for the development of sound relations I want to quote from "Human Leadership in Industry" by President Sam. A. Lewisohn of the Miami Copper Company, who states—"that the responsibility for bringing about sound relations between employers and employees is NOT equally divided. The individual initially responsible and influential in the industrial scene is the employer and manager. In cases of difficulty the primary deficiency in personality is probably his. If he is equipped emotionally and intellectually to lead wisely, the industrial situation is likely to be good. If he is biased, ignorant or neglectful in the matter of human organization, there is liable to be an unhealthy condition. It is for this reason that the psychological orientation of the employer is more urgent than that of the employee, and the education of the employer is initially more important than that of the employee."

In fairness to management it should be said that in its preoccupation with the incredibly rough and tumble struggle for competitive survival and with developing and improving the technology of production and distribution, the problem of decent human relations in a democratic society has been largely obscured and overlooked.

Basic to the development of good relations at the workplace level is the requirement that the functions and responsibilities of both management representa-

tives and workers be clearly defined and understood. Making them understood is perhaps at once the most important and most difficult task.

Next comes the development of channels of communication through which all essential information concerning the functioning of the entire enterprise may flow to each and every human being identified with its operation.

To handle this all important phase of human relations requires the discovery and development of far more skills than are generally in evidence today. To describe the relation of the part each individual should play in achieving the total goals established requires an especially high degree of social skill. Upon its use will largely depend the degree of success to be achieved in having each person identify his importance and relation to all the others in the enterprise.

"Social skill," says Dr. Mayo, "shows itself as a capacity to receive communications from others, and to respond to the attitudes and ideas of others in such a fashion as to promote congenial participation in a common task."

It is only when an awareness of the importance of these management responsibilities is fully realized, that it can be expected that the Union of which the employees are members can be reasonably expected to provide the training and group disciplines so necessary for orderly and decent group human relations.

Unions with little aid and encouragement from either management or educators have struggled with the problem of providing facilities for the training of local union officers and committeemen. It is only very recently that some nationally known educational institutions have become seriously aware of, and concerned about, their responsibilities in the field of decent human relations in industry.

Illustrative of the potentialities of possible joint management-labor participation in training programs that may well lead to improved human relations, a person holding a high executive position with one of our great corporations enrolled during the past summer in a Training Institute initiated by the United Steelworkers of America and conducted under the auspices of the Union and the faculty of Pennsylvania State College.

There for the first time he met and became personally acquainted with some of the Union officers and committeemen of the local union of which the employees of his company were members.

They together with about 100 other local union officers and members were spending a week of their

annual vacation endeavoring to learn more about the complexities of industrial relationships. Their class room schedule began at 8:30 a.m. and continued until 9:00 p.m. except for lunch and a two hour recreation period in the afternoon.

So impressed was he with the sincerity, earnestness and eagerness to learn of this group, that his company later proposed to the Union that it join with the Company on a co-equal basis in underwriting a School of Industrial Relations at a local college, in close proximity to the main plant of the company.

The programs of training and education for workers and management being developed at the Labor-Management Center at Yale under the direction of Dr. E. W. Bakke; the Trade Union Fellowships at Harvard; the Industrial Relations Center at the University of Chicago, to mention but a few, are hopeful signs of the somewhat belated recognition on the part of educators of the existence of the very real problems of human relations in industry.

Once the relations in the workplace have been placed on a sound and democratic basis permitting the widest possible congenial participation in the common endeavor, the pieces of the jig saw pattern of relations will begin to fit together on the broader industrial, regional or other geographical areas.

A sage once remarked that to "know a man is *not* to fear him." One of the undesirable by-products of corporate organization, absentee ownership and unnecessarily autocratic administration, is the impersonal nature of relationships and the difficulty experienced by both management and union employees in finding means by which they can come to really know each other and in providing creative participation and expression.

Social psychologists examining the motives that actuate foremen and other supervisory personnel to form or in joining Unions will undoubtedly discover that the absence of adequate recognition of the importance of their function; the impersonal character of their relations with their superiors, the lack of a feeling of real and creative participation in the management of the enterprise, cause them to grope for other means of satisfying the urge to be counted for something.

The basic reasoning back of CIO President Philip Murray's proposals a few years ago for the establishment of Industry Councils with management and labor representation was that men who have come to know each other through the Union-Company relationships, if brought together on the broader

industry basis, could work out, develop and agree upon rules governing their relations and conduct and become prepared to accept broader social responsibilities.

Notwithstanding the constant dramatization and repetitious reporting of conflict, one fact, upon careful examination, will be found to be outstanding, to the careful student or observer of human relations in industry. That is that there are more instances where organizations of workers and their employers have found a basis for living and working together harmoniously, than there are instances of recurring conflict.

Secretary of Labor Schwellenbach estimates that there are more than 50,000 written and signed collective bargaining contracts between employers and Unions. On an average 1,000 such agreements expire weekly, and the vast majority of them are revised and renewed through conference and negotiations without any work stoppages, and frequently without the aid or even knowledge of government.

While there have been frequent governmental and private inquiries into the causes of industrial conflict, it is only recently that the National Planning Association Board of Trustees has launched an "Inquiry into the Causes of Industrial Peace." If thousands of employing companies and Unions have learned by trial and error how to live and work together harmoniously, it is altogether probable that others less fortunate can learn and profit by their experiences.

May I conclude this presentation with a plea and a quotation? My plea is:

a) That as technically trained people identified with management, you use your influence among your

associates in an endeavor to see that the organizations of workers—Unions—their reasons for existence and their purposes be intelligently understood—not blindly resisted and opposed.

b) That when greater understanding is achieved, efforts then be directed toward creating a climate conducive to congenial participation and genuine cooperation in the formulation of policies and decisions embodying a wholesome and healthy regard for human worth and dignity, decent human relations and the well-being of society.

The quotation is from the writing of that great historian and former President of the United States, Woodrow Wilson:

"When I look back on the processes of history, when I survey the genesis of America, I see this written on every page; that the nations are renewed from the bottom, not from the top; that the genius that springs up from the ranks of unknown men is the genius which renews the growth and energy of the people. Everything I know about history, every bit of experience and observation that has contributed to my thought has confirmed me in the conviction that the real wisdom of human life is compounded out of the experience of ordinary men. The utility, the vitality, the fruitage of life does not come from the top to the bottom; it comes like the natural growth of a great tree, from the soil, up through the trunk into the branches to the foliage and the fruit. The great struggling unknown masses of the men who are the base of everything are the dynamic forces that is lifting the levels of society. A nation is as great and only as great, as her rank and file."

Time Out for Briefing¹

By RODERIC OLZENDAM

President, Roderic Olzendam Associates, Tacoma, Washington

FOR one, am exhausted listening to speeches, reading articles and sitting in sessions where we ring the changes on everything that's wrong with the world. Everybody knows the world is sick. What each of us wants desperately is to hear somebody prescribe one practical curative treatment we can actually begin to administer tomorrow morning.

We propose to do that very thing—prescribe specific treatments designed to restore health to one part of the body politic—Human Relations in Industry.

To be in a position to prescribe treatments in a specific area we must first "Brief," review and condense the total situation in which we find the patient.

The Biggest Job in Salesmanship

The treatments involve the biggest job of salesmanship Americans have ever undertaken.

Delegates Combine 4,000 Years of Selling Experience

What then is the total picture?

We Chose to Have the World Confused

Almighty God gave man the power of choice. If the world looks ill and confused today, it is because you and I chose to have it unhealthy and chaotic.

American citizens have the power to choose whether they will cooperate and profit, or fight and lose.

Organized labor and organized management have the power to team up as business men and raise production 30% and lower prices, or to fight like kids, to strike, to lockout, to reduce production 30% and raise prices.

We have the power to produce and enjoy, or to loaf and let the government wet nurse us.

We have the power to choose plenty with low prices, or scarcity with high prices.

We seem to have made our choice in these fields, and today in America there is an alarming lack of bread, butter, meat, sugar, clothes, cars, stockings, egg beaters, lumber and homes for veterans. On V-J Day, 1945 we had the power of choice to produce or

not to produce. We chose not to produce. And so, between August 1, 1945 and Dec. 30, 1946 American citizens were on strike 139,000,000 man days. \$1,390,000,000 were withheld from the family budgets of hundreds of thousands of American homes as the price for increasing the income of the family budget 18½¢ an hour. In addition to the loss to employees in wages, there is the accompanying loss in profits not made, plus depreciation and fixed charges which go on during a shutdown. We chose thereby not to produce billions of dollars worth of the very things American men and women as consumers need desperately.

Beginning August 1, 1945 had those American citizens, members of organized labor and organized management, chosen to team up in their own self-interest and increase production 30%, unions, union members and other employed citizens, farmers, stock holders, consumers, public servants and starving humanity abroad would have been in a vastly more favorable position.

We had the power to choose to continue the magnificent cooperation which won the war, and use it to win the peace, or to fall apart and blame somebody else for a situation which seems quite out of hand. We apparently chose to become a nation of "blamers."

We Have Become a Nation of "Blamers"

It seems to have become fashionable, for presumably mature leaders, to assume a real tough and rugged attitude, to talk out of the corner of the mouth, calling everybody names who doesn't agree.

Labor blames capital; capital blames labor. Labor and capital blame politicians.

Protestants blame Catholics and Catholics Protestants.

Christians blame Jews and Jews Christians.

Whites blame blacks and blacks whites.

The CIO blames the AFL and AFL blames the CIO.

Our national blood pressure seems dangerously high.

A further examination of the patient reveals other symptoms.

We Say We Believe—But—

American citizens have fought to the death for the right to vote, but less than 30% of us vote regularly.

¹ Panel remarks by Roderic Olzendam, President of Roderic Olzendam and Associates, Counselors in Industrial and Public Relations, Tacoma, before the 43rd Annual Convention of the Pacific Advertising Association, Spokane, June 26, 1946. Copyright, 1946, by Roderic Olzendam.

We say we believe fiercely in the church; but the majority of us seldom go to church.

We claim to have the finest educational system with a higher percentage of youth attending than any other nation; but the ABC's of our economic and political system and the responsibility of the individual sovereign citizen to that system are apparently not understood by the majority of Americans who have gone through our schools.

We claim to have the best educated citizenry in the world; but 61% of the persons twenty-one years of age and over in the United States today have never been beyond the seventh grade.

We proclaim labor's right to organize and bargain collectively; but in most cases *regular* union meetings are attended by as low as 5% of the membership.

We shout free enterprise to the house tops; but less than 3% of employers take any regular active part in employer organizations.

We do a powerful lot of talking about all we owe to the "veterans"; but today those veterans are a disillusioned group of men.

We say we don't believe in pushing anybody around; but I'm sure we must hold the world's record for pressure groups in America, pushing everybody else around.

We say we hate Communism; but we apparently give official diplomatic recognition, with freedom of speech and freedom of action, to just as many Communists as care to come into the United States, infiltrate into our unions, churches, schools, colleges and other institutions and fill the air with their anti-American doctrines.

We say Production is the answer in war and peace and we have proved it in war; yet we permit our public servants to shackle enterprise in peace.

We say we believe in statesmen, not politicians; but we know practically nothing about the public servants who represent us.

A Look At The Environment

Now, I believe we should have a look at the environment of the patient. Compared to the environment of management and employees anywhere else in the world, the American citizen enjoys the highest wages and salaries, paid under the best working conditions; he draws the highest benefits in case of death, accident, illness, old age and unemployment; he works under the direction of the most capable executives, managers and engineers and he has longer vacations and more

holidays with pay than do the men of any other country on earth.

Given a Chance, Humanity Would Move To America

As a matter of cold fact, if the immigration restrictions were removed this afternoon and the people of every country in the world were free to travel wherever they chose, the greatest trek of human beings in all history would be towards North America. Yet, in spite of these facts, there are people in this country who are advocating the overthrow of the American system. They would replace it with an untried, totalitarian system wherein the individual has no freedom whatsoever. I doubt if these "changers" would themselves leave America and go to any other promised "land flowing with milk and honey." This is one of those abnormal, inexplicable blind spots.

Four Salesmen of Ideas

Finally, reaching out further in our diagnosis we make this observation: During the last twenty-five years the world has produced some outstanding salesmen who have been selling ideas the exact opposite of our American Ideas. Mussolini sold Fascism. Hitler sold Nazism. Hirohito sold Shintoism. Stalin sells Communism.

They did it through advertising, through showmanship, through relentless repetition, through re-enacting, through dramatizing basic falsehoods, over and over again. Two of them went the way of all flesh in rather ignominious ways; the third wanders aimlessly around, no longer the god he thought he was, while the fourth seems so uncertain of his thirty-year efforts that he doesn't dare let any ideas contaminate the hundreds of millions of people behind his iron curtain.

These men did a wonderful job of devilish advertising, *but they couldn't make it stick.*

The Diagnosis

It's quite clear from our examination that the patient has abnormally high blood pressure, a much too rapid pulse, far too frequent blind spots, and he shows symptoms of having taken too many pills prescribed by foreign quack doctors. This, then, is the diagnosis of the total situation. From this diagnosis we conclude that the American people are challenged with the biggest self-education job in history. It is perfectly clear that American citizens as a whole will surge ahead or fall behind in the world struggle of Ideas to the extent that they are able to bring health into Industrial Relations.

What We Have To Sell

From our diagnosis we conclude that we, the American People, have to sell ourselves on the following basic ideas in American Industrial Relations:

Employers and employees are American Citizens Associated Together in Business for their mutual profit—in short, they are Business Associates and without their combined efforts there can be no profitable business.

Higher real wages, shorter hours, finer working conditions, steadier dividends and more quality products at lower prices (which employer, employees and consumers want) can be enjoyed only as the result of teamwork between them to attain and maintain Continuous Maximum Production and Distribution.

Real wages are determined by the quantity of goods and services produced and consumed per American citizen. The only way to increase real wages is to increase the amount of goods and services produced and consumed per American citizen. The amount of output per American citizen is determined by the amount of money invested per citizen in each position, and, *in the attitude of mind that citizen has towards his position, towards his associates and towards the enterprise.*

Continuous Maximum Production and Distribution can be attained and maintained when the relationship between employers and employees is that of Business Associates.

It can be realized when each Business Associate produces the maximum amount of which he is capable, *because he understands why it is to his own business advantage to do so.*

An Attitude of Mind

This is an attitude of mind. It cannot be legislated, harangued or coddled into existence. It has to be sold. It is a job of mutual persuasion—the bringing of understanding between two men.

Every American who went on a mission in World War II was Briefed on the target, the weather, the possible dangers, the condition of the machine to be used, and he understood just how his personal *Physical Life* depended on his carrying out the Briefing.

The Economic Life of Every American, I Believe, Depends On Industrial Briefing

We prescribe Industrial Briefing for every American, whether he be a Producer, a Distributor, an employer or an employee, a union official, or a chamber

of commerce president. Each should Brief himself and his associates regularly on the Industrial target, the economic weather, the possible dangers, the machine he is to operate and how his personal *Economic Life* depends on his carrying out the Briefing by hitting the target of *Continuous Maximum Production and Distribution*.

Briefing summarizes, reviews, condenses and clarifies the simple fundamentals of production and distribution. It takes place regularly and privately.

No new employee should become associated with an enterprise who hasn't first been Briefed by the head of the enterprise or his personal representative.

All old employees should be Briefed by their department heads who have been trained in Briefing.

No new member should be taken into any union who hasn't first been Briefed on the union, its history, accomplishments, its production program and how the union helps the individual member to protect and improve his personal investment in the community.

Veterans Will Value Briefing

Twelve million American veterans know what the term "Briefing" means when applied to war. In their ranks are the future leaders of enterprise and of unions. Because 60% of these veterans went directly from schools and colleges into the armed forces, their average length of service in industry is one year. Therefore, we believe that these veterans will value highly the opportunity of being industrially Briefed regularly. The mutual interchange of ideas through Briefing will give them a knowledge and an insight into the functioning of American industry and labor unions such as they have not had.

Briefing will give them and all other young men the opportunity to make themselves and their talents known to management. Briefing will uncover talents in young men and women which otherwise might be buried and lie unknown for years.

Employer Briefs Himself First—Ten Employer Questions

The first American citizen to sell himself on the vital importance of having every person on the payroll understand his own self-interest in hitting the American Industrial Target is the employer himself, the head of each enterprise.

In the interests of hitting the target of Maximum Production and Distribution through improved Industrial Relations, I urge every employer in America to use the following ten questions in Briefing himself:

1. Do you blame somebody else for the present situation in Industrial Relations?
Politicians?
Labor Leaders?
School and College Teachers?
2. What did you do to try to prevent the present situation in Industrial Relations?
Have you ever talked to an employee about where his wages come from?
Have you taken time out to explain to an employee, so that he really understands, the unalterable economic fact that Continuous Maximum Production and Distribution is the prerequisite to steadily increasing real wages?
Did you ever demonstrate to an employee why it is to his self-interest to make a maximum, not a medium or a minimum contribution to production every day? Has any representative of yours ever done so?
3. Do you know how much of an investment your enterprise has in each position you hire an employee to fill?
Did you ever make this clear to an employee?
4. Do you know how much of the total income of your enterprise goes to employees after you have paid all your bills for doing business?
Do your employees know this?
5. Do you personally know how much of an investment each employee has in the community?
In his home?
Its furnishings?
His own education?
His means of transportation?
6. Do you know with whom your employees have discussed their relationship to your enterprise?
Was it with a time keeper, a foreman, or with an individual especially trained for that purpose?
Each person on your payroll spends the better part of his life working in business with you, or your representatives. Do you know whether one of your employees has ever talked for more than ten minutes with a representative of your enterprise about the enterprise?
Did the interview take place in a general room under confusing and noisy circumstances, or in a private room with the easy opportunity for a good exchange of experiences and ideas?
7. Do you know for sure what your "personnel man," time keeper or foreman has said or is saying about your company, its policies, its program, to

employees now on your payroll or those being hired every day?

Do you know whether the employee respects this representative of yours and is receptive to his explanation of the company, its policies and objectives?

Do you take it for granted he is doing a good job?

Did you personally ever discuss his position with him?

8. Did you advocate and support, or did you oppose, these now nationally accepted programs?

The shorter work day?

Gradually increasing real wages?

Collective bargaining?

Government insurance against death, illness, accident, old age and unemployment?

9. What have you personally done to place the human relations in your enterprise on an enduring American basis?

Do you really know the people who are your associates—their talents and possibilities, what they have that is needed to strengthen and improve the functioning of the enterprise?

What training program do you have designed to help your associates in all positions to be better men and therefore better associates?

Do you have a definite system of training on the job so that for important positions in mills and offices you have understudies being developed and trained to take over when necessary?

Industry cannot expect to go out on the street and pick up anybody to do a skilled job. Have you taught anybody the business?

10. Do you consider yourself a convincing salesman—a leader of the American System of Enterprise? How many people have you sold? Were they mainly those who naturally agreed with your viewpoint?

Could you extend your personal influence and effort more widely among your own people, in your community? Shouldn't you?

Do you pay dues to some organization and then expect somebody else to do your selling for you, to keep you out of hot water and to improve your Industrial and Public Relations for you?

Do you think employers are inclined to wait until their Industrial and Public Relations get into a jam and then to take some improvised action on the spur of the moment hoping to heaven it works? When the crisis is passed, do employers relax and

do little in a fundamental way to prevent another crisis?

What more important job do you personally have than Human Engineering beginning tomorrow morning in your own enterprise?

Situation Calls For Action by the Employer

An American employer who seriously considers these questions, who takes time out to write the answers down for his own enlightenment, will, I believe, convince himself of the vital business necessity of spending an adequate amount of time, brains, patience, imagination and money to develop understanding on the part of every member of the management staff and of every individual associated with the enterprise in any capacity whatsoever.

To carry out Briefing the employer, or his personal representative, should spend at least one hour with each new employee and each old employee every six months. They should continue to spend this time together until they are hitting the Target of Maximum Production and the resultant benefits are fully evident to all concerned.

Subjects To Be Covered In Briefing

Some of the subjects to be Briefed, clarified and demonstrated are these:

Where the wages of the individual employee come from.

Why Production is the answer for the employee, the employer and the consumer.

How the employee can best protect and improve his personal investment through production.

The spirit of the company, its background, accomplishments in peace and in war; plans for the future and how the employee can fit himself into those plans and thereby benefit himself and his family.

How the community has profited from the operations of the enterprise in wages to employees, purchases of supplies and services for doing business, in taxes to government, in dividends to shareholders, in products and services to consumers.

Summary

I believe it is clear from our diagnosis that the cause of our illness in Industrial Relations goes deeper than wages, hours and working conditions. Of course every American wants better hours, wages and working conditions, better dividends, products and prices. That's natural. It is clear that these results are all

attainable, but, only if we have a radical change in our attitude towards each other, as American citizens.

Every American is an individual, a personality, a sovereign citizen, and he wants to be dealt with as such and not as a "number," a "worker," a "boss," a "hired hand" or a "wage slave."

He is, in fact, a Business Associate.

The majority of Americans will respond, I believe, in a marvelous manner when the employer *works with* each individual on his payroll as he works with every other person associated with him in business.

This attitude of mind can be brought into American Industrial Relations through what I call Industrial Briefing.

Industrial Briefing has as its objective, the attaining and maintaining of Continuous Maximum Production and Distribution through selling each individual on his own self-interest in production.

Through Industrial Briefing I believe we can bring into every enterprise a new light, we can infuse a new spirit, an understanding, a lift to the job, which will be reflected in a rise in production with all the attendant benefits to every individual who has had a part in getting the results.

As individuals 90% of American citizens are middle-of-the-roads—they believe in the very things we are talking about—The American Idea. They do not believe in Communism or Socialism for America. But these Americans are not making their views felt where it counts. Through Industrial Briefing of individuals by companies and by unions each individual will become equipped with the mental weapons he needs to fight and win the world battle of ideas. Once he is equipped with these weapons (ideas and arguments) he will overcome all contenders and together, because we have taken "Time Out For Briefing," we will come out on top.

So much for a thumbnail sketch of Industrial Briefing by each enterprise.

Briefing by Unions

It is not enough that employers take these curative treatments in Industrial Relations. There are approximately 14,500,000 members of organized labor in the United States. They, too, need to sell themselves on the vital importance of Industrial Briefing, not only in the enterprise, but in every local of every state, national and international union. They, too, need to ask themselves some searching questions. When I was learning the forest products business, I was a member and an officer in Local 67 of the International Brother-

hood of Pulp, Sulphite and Paper Mill Workers, an invaluable experience for any man associated in American Enterprise today. In the light of this experience, it is my judgment that the vast majority of union members would value highly the educational opportunity not only of being regularly Briefed by a representative of the company, but also by the head of the union to which they belong.

I have had many discussions on Industrial Briefing with my friends in organized labor. As a result, the following ten questions have been formulated by a Union Executive to be answered by the head of every union, local, national and international:

1. As a labor union leader, what steps have you taken to insure democratic action within your union?
 - a. Do you emphasize repeatedly that your union is an American Institution, rooted in basic American precepts and not related to any foreign ideology?
 - b. Is every member of your local union notified in advance of all important business to be transacted at each meeting, thus giving the individual member the opportunity of attending, taking part in the discussion, and voting on all matters?
 - c. Is full floor discussion allowed on all issues?
 - d. On controversial matters, do your bylaws provide for a secret ballot?
 - e. Is constructive criticism of the actions of officers and union policies encouraged?
 - f. Are understandable financial reports accessible to your members?
 - g. Do your members have the right to determine how funds from the union treasury are to be spent?
2. What have you, as a union officer, done to keep your members informed on:
 - a. The aims and purposes of their union?
 - b. The responsibilities of the union and its members under contract terms with employers?
 - c. The responsibility of your union to live up to the letter of every pledge in every contract?
 - d. The history of your local union and the American labor movement? Are you familiar with labor statutes and laws and the reasoning behind them?
3. In your labor contract negotiations with employers, do you rely alone on collective action, or direct action, to insure your demands?
4. What have you done to inform yourself on the

relationship between employee and employer in our present day economy?

5. Have you made a study of your employer's business, production methods and markets so that, if asked, you are qualified to make suggestions for improvements that will be of mutual advantage to you, your union and employer?
6. If your union publishes a periodical, what have you done to insure that its editorial policies honestly reflect the views of the membership majority, rather than the personal views of the officers? Aside from the necessary precautions for libel and obscenity, do your readers get supportable facts free from censorship and bias?
7. Do you believe that those American Citizens who invest Capital in Enterprise are entitled, as a matter of right, to a fair return from their investments co-equal with labor's right to a fair return for work performed?
8. Is it your desire to work in harmony with employers rather than to encourage disputes? Are you willing to make compromises to the end that a better employee-employer relationship may exist?
9. What has your union done to increase the working efficiency of its members in their trade? Do you have a training program for those members who seek advancement in their trade?
10. Are you sincere in your pronouncement that full employment is a desirable goal? If so, does your union have restrictive apprenticeships, prohibitive initiation fees, contractual make-work provisions?

We recommend that the head of each American enterprise honestly answer the ten questions posed for management and that the head of every union, local, national and international, honestly answer the ten questions posed for them.

If the head of each American enterprise and the head of each American union will take "Time Out For Briefing" himself, through personally and honestly answering these questions, we believe that the first step will be taken toward the laying of a new and solid mental foundation. "We in American industry and American unions have it within our power to change the course of American history by selling the American philosophy I have just expounded. American employer and their supervisors working shoulder to shoulder and mind to mind with the men of American enterprise can win the world battle of ideas. This is 'Operations American.'"

BOOK REVIEWS

Education for Industry Through Apprenticeship. By Wm. F. Patterson and Marion H. Hedges. New York: Prentice-Hall, 1946. \$2.50

This book, sub-titled "Policies and Procedures of a National Apprenticeship System," is a stimulating, practical handbook on apprenticeship training for use by workers, educators, union leaders, and managers. There are useful appendixes and a good bibliography.

The authors have long and direct association with the important but too inconspicuous problem of supplementing the traditional public educational system with a program of training on the job. Mr. Patterson is Director of Apprentice-Training Service in the U. S. Department of Labor and Mr. Hedges is Director of Research for the International Brotherhood of Electrical Workers.

Local unions and plant managers, international unions, and whole industries and the agencies of the states and the Federal Government have been working quietly for years on this program, the goal is equality of opportunity through training that fits the young man to work and earn a living.

The Patterson and Hedges book tells how a wholly voluntary program, sought and promoted by labor, valued highly by management, aided by educators and government officials, has grown into a nation-wide movement, it describes important handles by which the apprenticeship program can be picked up by unions and managers and carried through democratically to a very practical result.

Systematic trade apprenticeship emphasizes internships on the job and thorough understanding of the basic skills, purposes, and history of occupational functions. It seeks to avoid and to free men from a narrow specialization that ties the worker to a transitory competence useful for a too brief phase of technological advance. Human talents and energies are too valuable, men have a right to be more than a tool soon blunted—that is the basic credo of apprenticeship training.

GORDON R. CLAPP

A Rebel Yells. By H. Frederick Wilkie, Van Nostrand Co., Inc., New York, 1946, pages xiv, 311, \$3.00.

Members of SAM will want to know this book thoroughly. It is written by one of our members with a mind a good deal bigger than his job and with a corresponding vision of the opportunity as well as the shortcomings of much of modern industry. On nearly every page he pours out penetrating and quotable thinking on management—especially in its personnel aspects.

Still it is rebellious. Don't take the word "personnel" in its current meaning! Don't assume that his discussions of selection, job-analysis, training and job rotation are the current patter! And don't assume, as Mr. Wilkie would caution us, that he is always right. As few have done since we used to hear from Robert B. Wolf, Mr. Wilkie discerns not only the monstrous waste which comes from industry's failure to enlist people's enthusiasm, but he also points out the dangers and follies of it. He is an employer in rebellion:

"Unless it (conventional industry) mends its ways, its next depression cycle may well be its last, for collectivism stands ready to take over to provide employment and produce basic necessities—whatever the cost may be in social, political, or personal values. . . . It will become the first target for the forces of collectivism. We have already seen this happen." (p. 104)

"Furthermore, industry gets its raw materials and carries on its activities through the sufferance of society, a fact which is too often disregarded by industrial leaders, but which becomes immediately apparent when public opinion becomes aroused or strong, and widespread resentment appears to be directed against any one industry. Quickly enough society can control that industry or even eliminate it if it so desires." (p. 129)

Think then, of *A Rebel Yells* as a discussion of supervisory methods by an experienced, resourceful and kindly executive. If it were no more it would be of immense service to students of management. But it goes on with a stirring program for the consideration of industry. This reviewer, for one, has no expectation that industrial leaders will adopt any such program as this until they are scared into it by the competition of state-owned industries in Europe which, whatever their practical obstacles, will undoubtedly rationalize their research and training methods. Now that is what seems certain to happen—is already happening. And here in *A Rebel Yells* we are presented with a program of vision and scale made tangible and concrete for our discussion,—with the Wilkie sense of timing.

As happens with every volume of magnitude, readers will take from this book various lessons and dissimilar suggestions. So you run certain risks if you assume that the following digest of his program is what you yourself would get out of it. But Mr. Wilkie refrains, perhaps deliberately, from supplying a summary.

First he recommends a new member of the President's cabinet, a Secretary of Research:

"It should be the function of such a Secretary to establish a National Research Foundation which would have three broad functions: *First*, the correlation of research done currently through universities, private foundations, government agencies, and individual efforts. *Second*, the performance of original research, or . . . (its) delegation . . . in fields where the national interest seems to require the exploration of material not presently available. *Third*, the dissemination of technical materials for universities and research workers on the one hand, and, on the other, simplified materials for the average non-technical person, similar to those documents now issued by the present Department of Agriculture." (p. 118)

"The function of research should be to map out future industrial and cultural developments, to indicate the way of life for the future. For industry it could supply a backlog of ideas, data, and principles which will enable industry to serve that future society . . . the society of tomorrow can be little better than the today's thinking from which it is built." (p. 124)

"Certain trends along which this industrial cooperation may develop are obvious. First of all, industry must serve itself. It must, at all costs, preserve a cycle of products and by-

products, the sale and distribution of which are the lifeblood of industry. . . . " (But, second,) "far beyond the conservation of physical assets . . . The vast body of industrial personnel remains to be developed through education." (p. 126)

A Rebel goes exhaustively into this obligation to industrial employees. For he is by no means inclined to urge that industry lean on the government. But this review can only hint at his idea on training by a glimpse from his prescription for team play:

"In order to play most effectively on the team each man must . . . be able to estimate accurately his own limitations in any given situation . . . A running inventory of one's abilities and capacities is a most useful tool in the forestalling of failure, it prevents overreaching, while . . . it allows a man to know how far to depend upon experience and training." (p. 39)

There is a full length portrait of the responsive executive as a source of help, inspiration and fellowship in his niche in industry. (Just here there may be a practical limitation even after the conventional policy of tell-em-nothing has been outgrown. Only a certain proportion of executives can *spare the time* to be responsive unless the plant enjoys a successful labor-management committee structure. Mr. Wilkie speaks favorably of this joint movement but states that the "great body of labor and most of management still behave as if their interests in industry are inimical.") (p. 129)

In addition to the training which fits employees for their intrinsic duties and for upgrading—and here is where you hang onto your hat:—

"Employees spend less than a third of their time at their jobs, they should receive training in homemaking, domestic science, and the arts and crafts in order that they may during the remaining time achieve a sound home background. . . . should be trained in means of self-expression which will make

for personal and emotional stability. Above all they should learn to read with understanding . . . " (p. 126f)

"Industry can accomplish its development of human resources only through organization . . . Such a program cannot succeed unless the underlying principles are universally accepted." (p. 127)

"Industry, however, cannot plunge offhand into so vast a project. It should prepare for its program by research, by education and by public services which are more effective and more far-reaching than those which have already been started by government . . . (p. 128)

There is no space to brief the other features of his program. It penetrates into the primary school, urging better orientation in words reminding us of Dr. Dewey's teaching; and from the schools of higher education, Mr. Wilkie urges an extension of employee training by help from professional teachers as well as by closer collaboration in research on local problems.

A Rebel is uncomplimentary to "conventional" industry's attitude toward science, and urges that industry "must take over not only the trappings of science, but its methods and tools as well. It must shed its fear of negative conclusions, it must keep records which will bear inspection by any reputable researcher; it must publish from time to time, regardless of whether or not what it has to publish lends itself to an advertising campaign." (p. 260f)

So we have here a fresh and timely call to industry to prepare itself for the whirlwind of change. We have had many inspiring writings before from the ranks of employers. It would be useful to have a study of the writings of Messrs Debnison, Kendall, Lewisohn and Wilkie as influences on industrial philosophy and industrial practice. The need for rapid adaptation to change is made terrifyingly clear in *A Rebel Yells*.

FRANCIS GOODELL

Management Consultant

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